

March, 1957

SOAP and CHEMICAL SPECIALTIES

this issue...

Increased consumption of soaps
and detergents on increase
.....

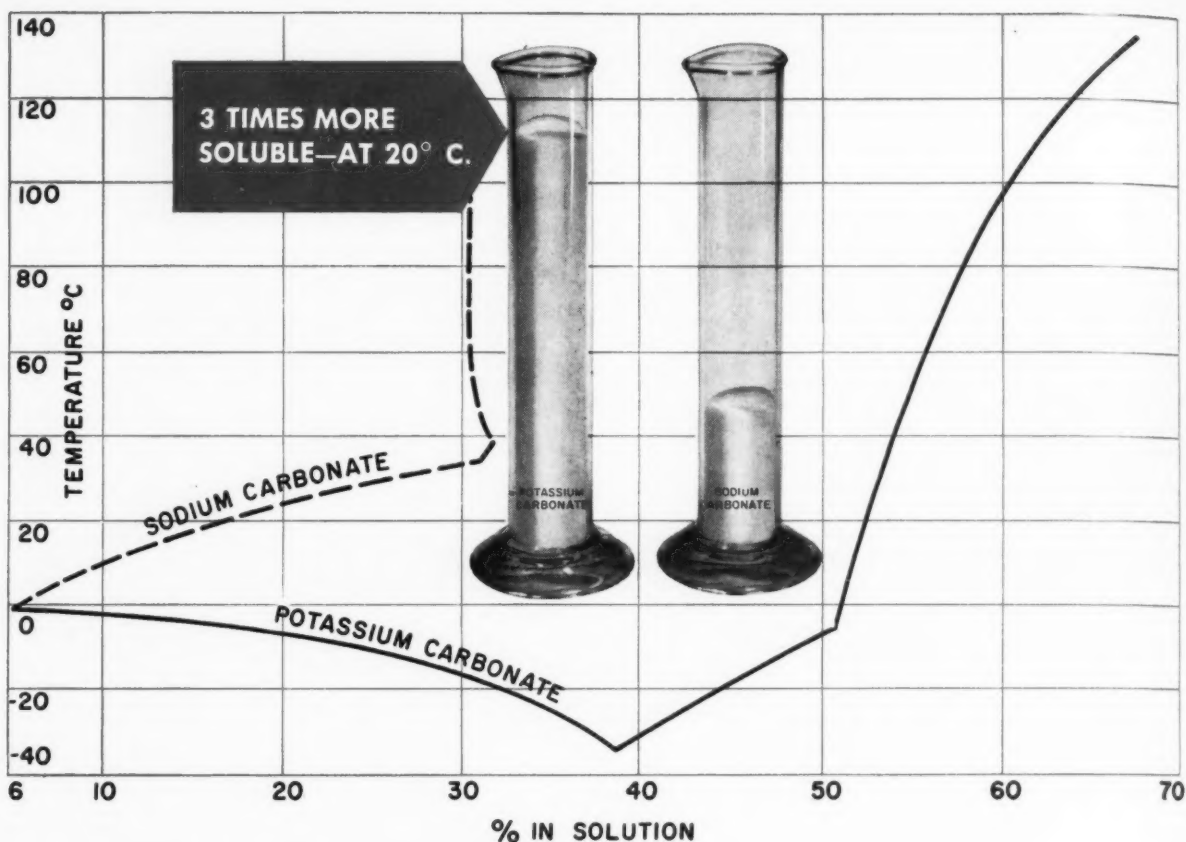
Improved aerosols possible
by new method of analysis
.....

Water filtration of waxes
to reduce production costs
.....

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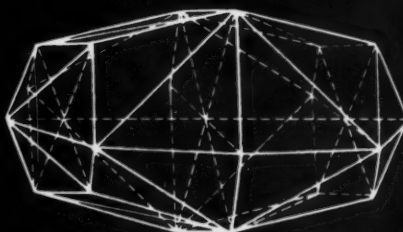
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MARCH, 1957



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SOAP and CHEMICAL SPECIALTIES

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Wax

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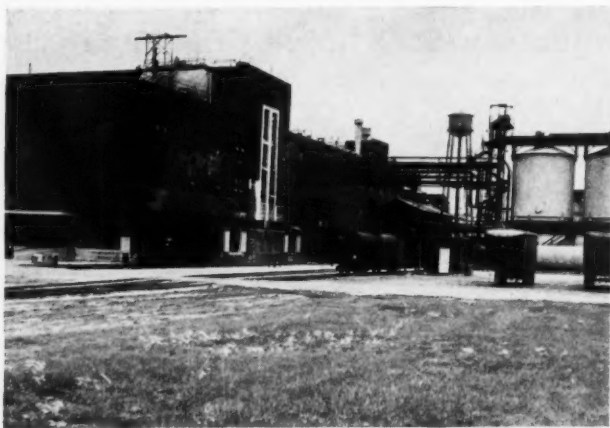
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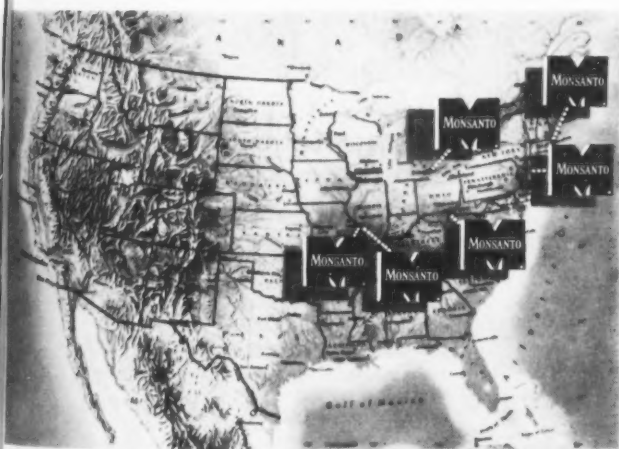
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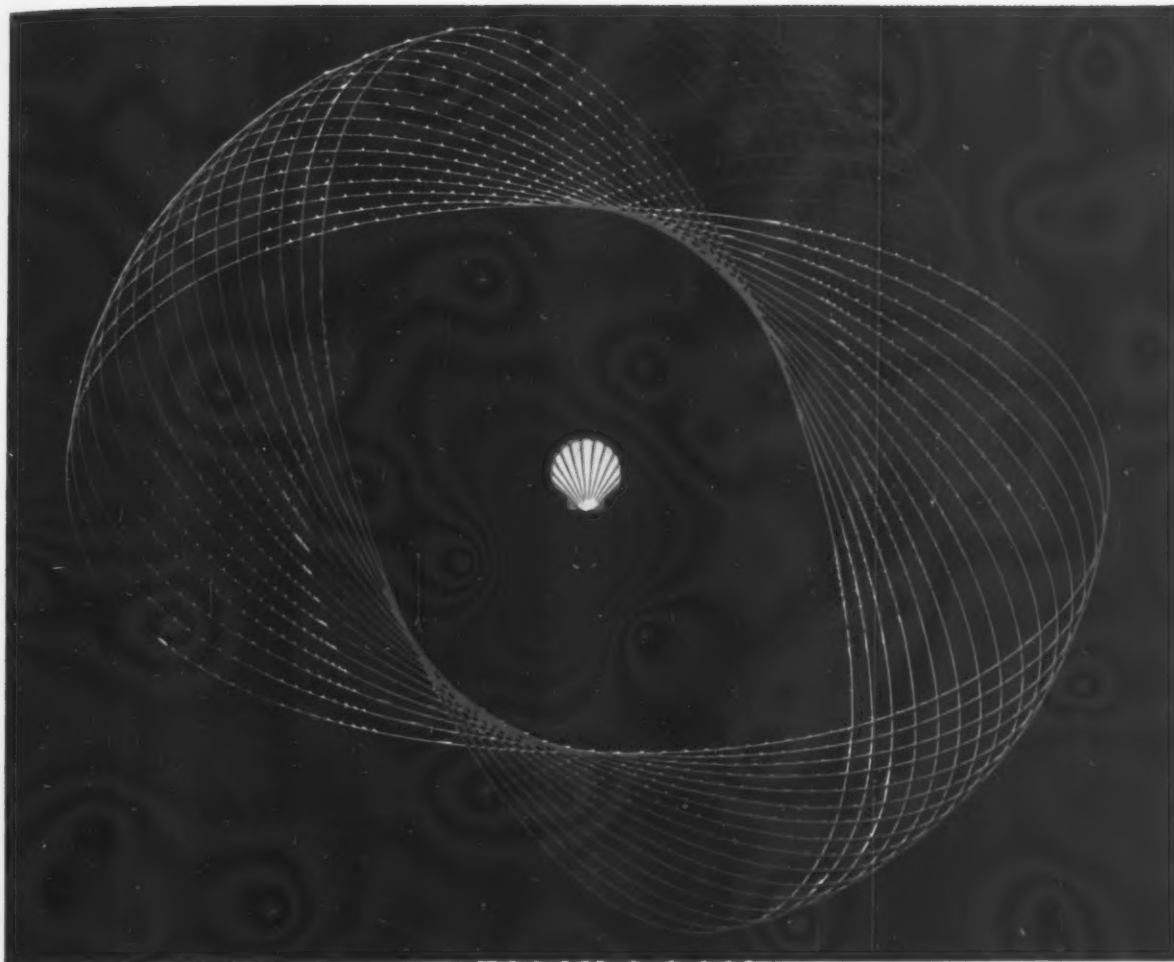
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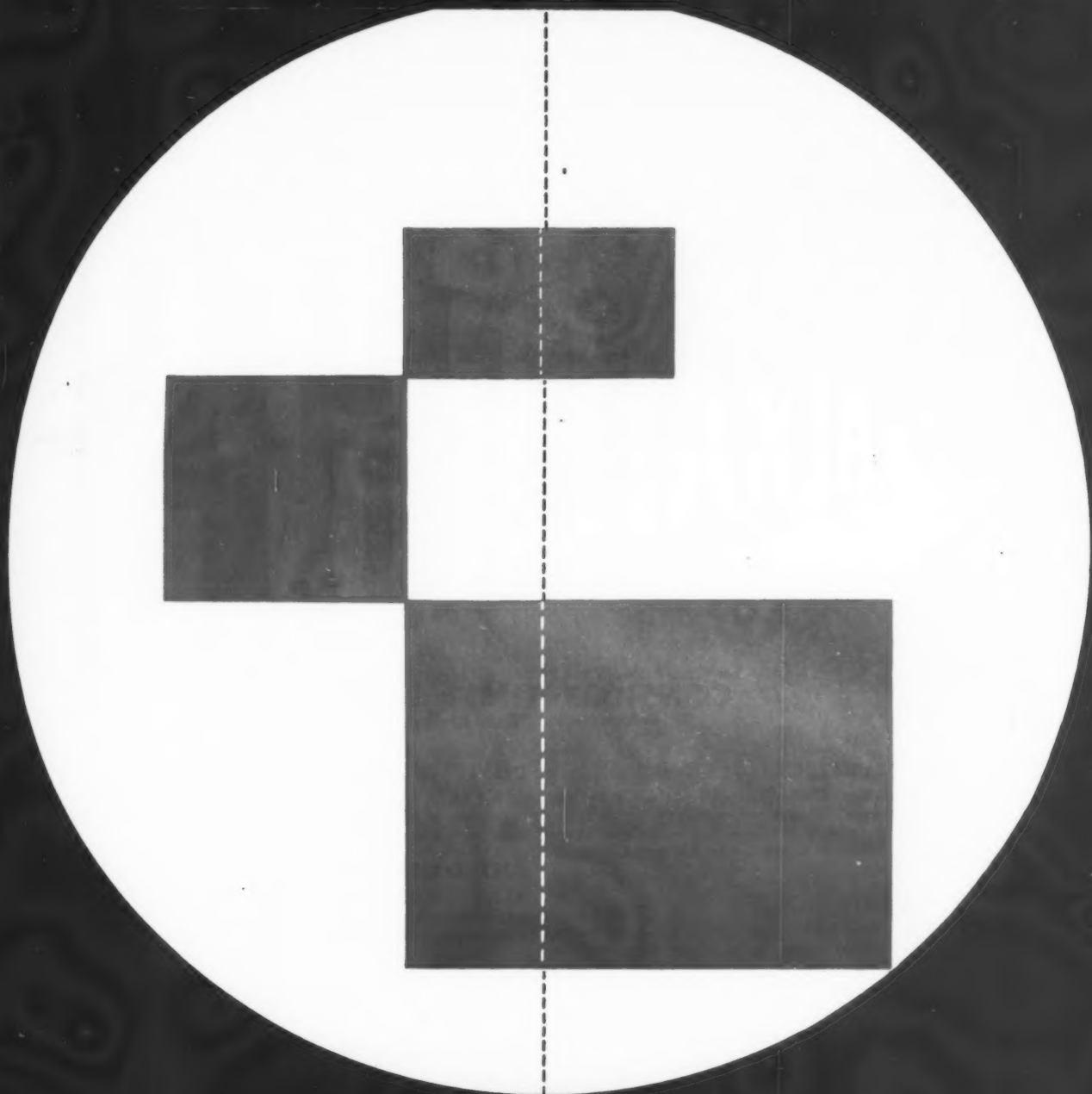
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In reaction with mineral acids, ALKATERGES form water-soluble salts that produce stable foams. These salts, and the salts of lower monobasic organic acids, and of hydroxy acids are excellent wetting agents. With the higher fatty acids, ALKATERGES form oil-soluble soaps.

PENETRANTS

Solutions of the salts of ALKATERGES are useful as penetrants in textile, paper, metal cleaner manufacture. Reported to reduce resin consumption in the waterproofing of paper.

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ALKATERGES delay drying of film in a drying oil. Reported to reduce gum formation in a hydraulic oil system. Aid cleaning of a dirty system.

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Does chelation actually represent a new kind of chemistry? Are the possibilities as exciting as many seem to think? This series endeavors to answer these—and many other—pertinent questions on this fascinating subject. It is hoped chemists, engineers and purchasing agents alike will find these answers helpful. Now on to . . .



The Chemistry of Chelation: Part II

Versene and Versenol Series • Descriptions and Uses *A measure of Value • A Suggestion*

To review in capsule form: Part I introduced chelation, offered examples of typical chemical reactions, applications, and discussed future possibilities. You will remember that a chelating agent is defined as a chemical which surrounds metallic ions with a multiple-ring structure that keeps the metal chemically inactive and holds it in solution. The applications in industry are many—and new ones are being found almost daily. That, of course, brings us to another consideration: different chelating agents for different uses.

VERSENE® AND VERSENL®

Chelating agents are commercially available from Dow as 15 different products—all based on aminocarboxylic acid derivatives. Among these, wide spectrum performance is shown by two series of products. The Versene series of products (Versene® 67, Versene 100, Versene Powder, Versene Beads, Versene 9 and Versene Acid) is based on EDTA* and the sodium salts of this material. The Versenol series (Versenol® 120, Versenol Powder and Versenol Beads) consists of various physical forms of Na₃ HEDTA**. The Versene series, except for Fe+++ in the alkaline pH range, is generally the stronger series of the two (more completely chelates the last traces of metal). The Versenol series is notably stronger for Fe+++ in the mildly alkaline pH range and is usually cheaper on a performance basis if the consumer can tolerate the weaker chelate structure. Versene is the strongest, most stable commercially available chelating agent. It is the one with the greatest number of successful applications.

DESCRIPTIONS AND USES

Here are three Dow chelating agents together with their descriptions and uses:

Versene 100 is a concentrated aqueous solution of a technical grade of the tetrasodium salt of EDTA . . . widely used in textile processing, detergent formulations and metal cleaning.

Versene Acid is a dry form of EDTA technical. It is used in many operations as a raw material for the preparation of various derivatives, such as metal chelates, salts (K, NH₄), esters and many others.

*Ethylenediaminetetra acetic acid

**Trisodium salt of N-hydroxyethylethylenediamine-triacetic acid

Versenol 120 is a concentrated aqueous solution of a technical grade of Na₃ HEDTA. It is also very valuable to detergent, textile and metal-cleaning processes.

Naturally these three specific agents are not the answer to every problem. That's the reason for the many other Versene products, to be discussed in Part III.

A MEASURE OF VALUE

A measure of the broad performance capacity of a chelating agent can be obtained from its *chelation value*—determined on a reference metal. Calcium is used as the reference metal under the standard test procedure accepted by the industry. Dow prefers this "performance basis". It specifies more clearly what chelating agents *actually accomplish* than such terms as "% solids" and "% active". Consequently, the "100" in Versene 100 means that one gram of this product will chelate 100 milligrams of calcium carbonate in accordance with the standard test procedure. By the same token, one gram of Versene 67 will chelate 67 milligrams, and so on.

A SUGGESTION

Two closing thoughts: Dow wants to help in any way possible to further develop the applications for chelation. Also important, Dow would like to hear from *you*—your thoughts, reactions, suggestions. Please inquire about any problems or ideas you may have. Information or actual technical assistance will be forthcoming promptly. Write, on your company letterhead, to Technical Service and Development, Dept. SC 912H-3, THE DOW CHEMICAL COMPANY, Midland Michigan.

ADDITIONAL TOPICS IN THIS SERIES

PART III

Specific chelating agents for specific applications (agent for iron control depends on pH—Versene Fe-3 Specific® for iron and transition metals on the alkaline side, Versene T® for iron in presence of free caustic—other solutions to special problems).

PART IV

Applications in specific industries (formulation of alkaline cleansers—stabilization of hydrogen peroxide and Kier boiling in textile processing—uniform control of trace metal catalysts in polymerization of synthetic rubber—other industrial applications).

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DOW

Helpful answers to CAUSTIC QUESTIONS

As a leading producer of Caustic Soda, Columbia-Southern is asked many questions every month about this versatile, widely-used alkali. While the answers probably are not completely new to every Caustic Soda user, they do re-emphasize certain basic points that shouldn't be forgotten. We hope that you will find this series interesting and helpfully informative.

What is the necessary raw material for Caustic Soda?

Plentiful supplies of brine are required for the electrolytic production of Caustic Soda. This process also liberates Chlorine as a co-product. An electric current is passed through a sodium chloride brine solution contained in specially-designed cells. A 10-12% Caustic Soda solution forms at the cell's cathode. This low concentration liquor is evaporated to yield the various concentrations desired.

Is Caustic Soda an element?

No. Caustic Soda is a compound of sodium, hydrogen, and oxygen. It is known chemically as sodium hydroxide, and is commonly called lye.

How much liquid Caustic is now produced?

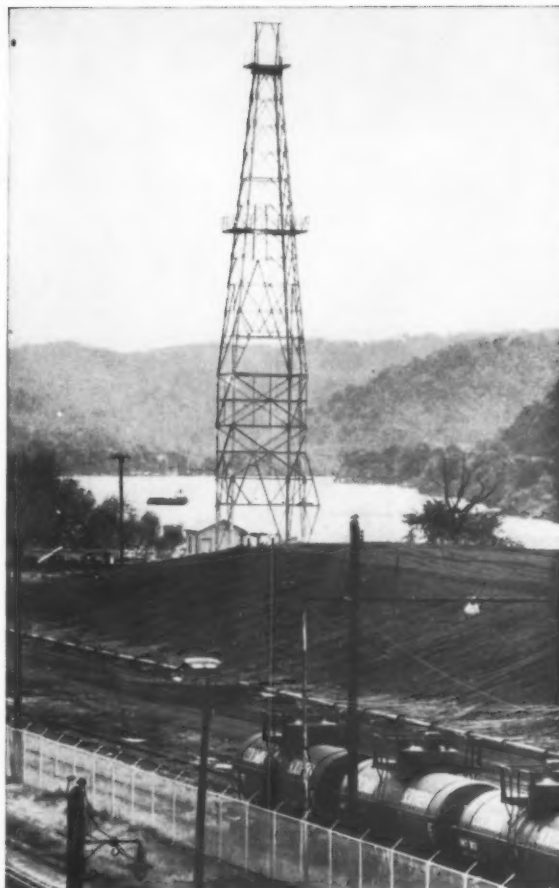
Latest six-month figures for the January-July 1956 period set the production of liquid Caustic at 2,169,368 short tons for electrolytically manufactured, 260,899 short tons for lime-soda process.

What type of pumps are recommended for the transfer of Caustic liquor from tank cars to storage, and from storage to the point of use?

Centrifugal pumps do the job best. All-iron construction with no brass or bronze fittings is generally preferred. For high temperature use, nickel or nickel alloy pumps will give longer service and the liquor will show less metallic contamination.

Who currently uses the most Caustic?

The chemical processing industry itself is by far the largest group user of Caustic, consuming roughly 25% of all production. Rayon and film producers rank second, followed by such large volume consumers as the petroleum refining, pulp and paper, cleaners, soap, textile, metals, vegetable oils, and rubber industries.



SOME OF THE WORLD'S DEEPEST BRINE WELLS, operated by Columbia-Southern to supply the New Martinsville, W.Va., Caustic Soda-Chlorine plant, draw salt brine from depths of a mile and a quarter.

How much water is required to dilute a tank car of 73% Caustic solution to a more easily stored 50% concentration?

About 6,100 gallons of dilution water are needed to bring an 8,000 gallon tank car of 73% down to 50% strength; 7,650 gallons of water to dilute each 10,000 gallon car.

How can each user determine the most economical grade and form of Caustic to buy?

Much, of course, depends upon the user's end product and processing requirements. Solid, standard flake, 50% and 73% solution, all have certain advantages. Processing advances, transportation developments and freight rate changes, however, dictate a periodic review of your purchasing. Columbia-Southern will be happy to look for economies you might well realize . . . at no obligation to you. Call, write or wire our Pittsburgh address for the prompt services of experienced Caustic Soda specialists.

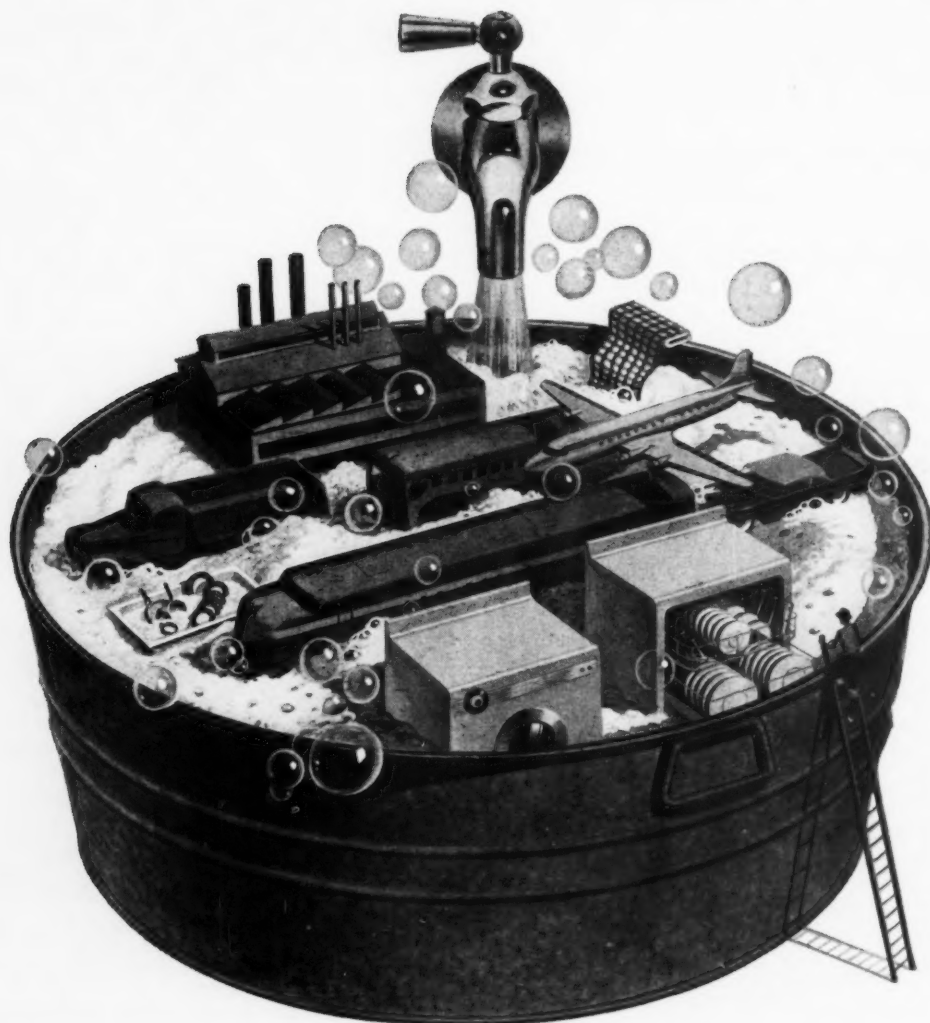


COLUMBIA-SOUTHERN CHEMICAL CORPORATION

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The spectacular success of Oronite ALKANE, as the world's leading detergent raw material, has been due to Oronite's continuous multi-million dollar research, product development and manufacturing program coupled with ap-

plication of large-scale continuous processing methods. This program has led to an imposing list of patents and has established Oronite ALKANE as the one standard of quality, the unduplicated raw material of the detergent industry.

Marketing the leading detergent raw material also brings a responsibility to the future. As in the past, millions of dollars are being invested in research and manufacturing facilities to assure that "you can expect from Oronite, whatever is new or better in detergent raw materials."

For the highest quality detergent raw material, or help on sulfonation processes, contact your nearest Oronite office.

*Trademark for detergent intermediate



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4159

After Closing

Mrs. Martin Schultes Dies

Mrs. Louise Schultes, wife of the late Martin Schultes and mother of Leonard H. Schultes, eastern sales manager of the Hewitt Soap Co., died March 4 of a heart attack at the home of her son at Little Neck, Long Island. Funeral services were held March 6 at All Saints Episcopal Church, Great Neck, L. I. Her husband, Martin Schultes was a vice-president of the Hewitt Soap Co. and was widely known in the cosmetic and soap fields. He was a founder of the BIMS of New York and its chairman for many years until the time of his death in March, 1951.

Bixon Names Hall

The appointment of Robert E. Hall as its representative in the midwest was announced recently by Michael Bixon, president of Bixon Chemical Co., New York manufacturer of floor maintenance materials and other chemical specialties. Mr. Hall, who has represented Chemical Service of Baltimore for the past four years, makes his headquarters in Huntington, W. Va. He will cover the following states for Bixon: Michigan, Ohio, Indiana, Kentucky, West Virginia, Tennessee and North Carolina.

Bowers Pioneer President

Alston Gordon Bowers has been named president and general manager of Pioneer Mfg. Co., Cleveland, effective March 1, it was announced recently. He succeeds R. F. Heron, who has been named chairman of the board. Mr. Heron has been with Pioneer for 44 years. Pioneer manufactures waxes, floor finishes, polishes, disinfectants and deodorants for sale under its own trade name and under private label through distributors.

For the past 16 years, Mr. Bowers had been associated with

Gerson Stewart Corp. and Hunt Mfg. Co., Cleveland. He served as chief chemist, vice-president of re-



Alston Gordon Bowers

search and production and executive vice-president before being elected president in December, 1951. Prior to joining Gerson Stewart in 1940, Mr. Bowers served for six years with New Method Varnish Co., Elmira, N. Y. While at the Elmira concern, he held the positions of chief chemist, sales manager and assistant to the president.

It was also announced that George Ross, assistant secretary, and Walter Myers, vice-president and plant manager, will remain in their present posts at Pioneer.

"Kinetic" to be "Freon"

"Freon" Products Division is the new name of the former Kinetic Chemicals Division of E. I. du Pont de Nemours & Co., Wilmington, Del., effective April 1, it was announced early this month. The change was made to associate the division's name even more closely with the "Freon" fluorinated hydrocarbons which it produces.

Kinetic Chemicals Division derived its name from Kinetic Chemicals, Inc., which du Pont acquired in 1950.

The first "Freon" compounds on a commercial scale were placed

on the market 25 years ago. The line today includes aerosol propellants, refrigerants, solvents, and fire extinguishing agents based on fluorinated hydrocarbons.

Economic Poisons Laws

Legislation dealing with economic poisons is pending in a number of states. Minnesota House Bill 162 would amend Minnesota Statutes 1953, section 24.072 to change the scale of registration and inspection fees. The new schedule will be \$7.50 for each of the first five products registered by any one firm and \$3.00 for each additional product. The amendment originally called for \$10.00 and \$2.00 respectively. The change was made upon protest presented by the Chemical Specialties Manufacturers Association.

An amendment to the Economic Poisons Act of Washington is contained in House Bill 251 which would exempt livestock remedies from the definition of "Economic Poison."

A pesticide bill generally following the provisions of the Uniform Economic Poisons Act is pending in Maryland as House Bill 175. Various improvements over the originally proposed bill have been made according to suggestions by CSMA.

In Pennsylvania pending House Bill 93 amends section 638 of the Penal Code (P L 872) to authorize exposure of poison to rodents and other pests under certain conditions.

Real-Kill Appoints Kroehle

Paul Kroehle Co., Cleveland, has been appointed broker for the Real-Kill Insecticide Division of Cook Chemical Co., Kansas City, Mo., it was announced recently by Roger Kirk, Jr., vice-president of sales and advertising. Mr. Kirk said that new markets recently opened by the firm now give Real-Kill complete national distribution, with 66 brokers in the United States and Hawaii, plus 25 distributors in foreign countries.

CSMA Lists Committees for 1957

THE Chemical Specialties Manufacturers Association recently announced its committees and members to serve in 1957. Chairmen of CSMA's general committees include the following:

Executive, James E. Ferris, Hooker Electrochemical Co., Niagara Falls, N. Y.; budget and finance, P. C. Reilly, Reilly Tar & Chemical Corp., Indianapolis; policy advisory, G. W. Fiero, Esso Standard Oil Co., New York; legislative, Robert J. Morse, Boyle-Midway, Inc., New York; past officers conference, Melvin Fuld, Fuld Brothers, Inc., Baltimore; precautionary labeling, A. Haldane Gee, Foster D. Snell, Inc., New York; toxicity, V. K. Rowe, Dow Chemical Co., Midland, Mich.; moth control publicity, D. J. Templeton, Stanley Home Products Inc., Easthampton, Mass.; membership, John R. Stoddard, Prentiss Drug & Chemical Co., New York; program, D. M. King, Masury-Young Co., Boston; entertainment, D. M. King; Chicago May meeting, Charles R. Lichtenberg, Chicago Sanitary Products Co., Chicago; arrangements, H. W. Hamilton, CSMA, New York; greetings, G. E. Doerr, Federal Varnish Division, Chicago; publicity and public relations, Frank R. Zumbro, Kinetic Chemicals Division, E. I. du Pont de Nemours & Co., Wilmington, Del.; associate members, M. Lemmermeyer, Aromatic Products, Inc., New York.

The following have been named chairmen of the Aerosol Division committees:

Administrative, Charles E. Beach, John C. Stallfort & Sons, Baltimore; glass and plastic container advisory, Lawrence P. Hall, Jr., Kinetic Chemicals Division, du Pont; aerosol commercial standards, R. W. Svendsen, Chase Products Co., Broadview, Ill.; aerosol publicity and product surveys, Frederick G. Lodes, Lodes Aerosol Consultants, Inc., New York; program, E. J. McKernan, Seaquist Manufacturing Corp., Cary, Ill.; membership, H. C. Tull, Crown Cork & Seal Co., Can Division, Philadelphia; post office policy, Charles E. Beach; scientific, J. J. Buchanan, Continental Can Co., Chicago. Sub-committees: definitions and terms as applied to aerosols, Ralph C. Downing, Kinetic Chemicals Division; methods of clinch measurements and effect on sealing efficiency, H. R. Umstead, Clayton, Corp., St. Louis, Mo.; filler safety, Frederick G. Lodes; glass container, Walter C. Beard, Risdon Manufacturing Co., Naugatuck, Conn.; insecticide standard methods, Montfort A. Johnsen, Peterson Filling & Packaging Co., Danville, Ill.; protective coatings standard methods, D. S. Tillotson, Pennsylvania Salt Manufacturing Co., Philadelphia; methods for determining particle size, F. W. Blodgett, Kinetic Chemicals Division; personal products standard methods, Victor DiGiacomo, Givaudan-Delawanna Inc., New York; post office, Walter C. Beard Jr., Risdon Manufactur-

ing Co.; pressure determination, Pete Clapp, Western Filling Corp., Los Angeles; public regulations, W. Earl Graham, Crown Cork & Seal Co.; safe fill, J. J. Buchanan, Continental Can Co.; unofficial rules and regulations for aerosols, R. V. Sharpless, Gulf Research & Development Co., Pittsburgh, Pa.

Committees of the CSMA Automotive Division are headed by the following chairmen:

Administrative and brake fluid, Harold G. Lederer, R. M. Hollingshead Corp., Camden, N. J.; program, A. James Coulter, Gulf Oil Corp., Pittsburgh, Pa. and C. A. Weslager, Finishes Division, du Pont; co-chairmen; committee to study the state laws and regulations governing the use and sale of antifreezes, Norman L. Amend, Wyandotte Chemicals Corp., Wyandotte, Mich.; products, C. E. Allerdice, Jr., Bell Co., Chicago.

In the Disinfectants and Sanitizers Division the following committee chairmen were elected:

Administrative, A. G. Bowers, Pioneer Manufacturing Co., Cleveland; commercial standards and program, Irving Gaines, Onyx Oil & Chemical Co., Jersey City, N. J.; scientific, A. S. duBois, West Disinfecting Co., Long Island City, N. Y.; interim committee on iodophors, C. E. Stevens, General Aniline & Film Corp., New York; sub-committee on peptones, A. S. duBois; sub-committee on quaternaries, R. C. Sherwood, Sterwin Chemicals, Inc., New York.

Committees of the Insecticide Division are headed by the following chairmen.

Administrative, Carlos Kampmeier, Rohm & Haas Co., Philadelphia; membership, H. W. Moburg, Rex Research Corp., Toledo; program, John A. Rodda, Fairfield Chemical Division, Food Machinery & Chemical Corp., New York; product survey, George W. Fiero, Esso Standard Oil Co.; scientific, Herman G. Schroeder, Fairfield Chemical Division, Baltimore; insecticide chemical analysis, Mark L. Hill, Gulf Oil Corp., Philadelphia.

Soaps, Detergents and Sanitary Chemical Products Division elected the following committee chairmen:

Administrative, Clarence L. Weirich, C. B. Dolge Co., Westport, Conn.; commercial standards, C. E. Stevens, General Aniline & Film Corp., New York; membership, L. D. Berger, Jr., Carbide & Carbon Chemicals Corp., New York; program, Walter C. Fox, Solvay Process Division, Allied Chemical & Dye Corp., Syracuse, N. Y.; specifications review, Daniel H. Terry, Bon Ami Co., New York; publications advisory representatives, M. R. McCorkle, Armour & Co., Chicago; scientific, J. C. Harris, Monsanto Chemical Co., Dayton, O.; subcommittee A on asphalt tile cleaning, B. S. Kroot, Hunt-

ington Laboratories, Inc., Huntington, Ind. Sub-committees: B on hard surface detergents, John L. Wilson, Economics Laboratories Inc., St. Paul, Minn.; C on dishwashing, J. C. Harris; D on foam and lather, L. E. Wells, Jr., Milner Products Co., Jackson, Miss.; E on manual of procedures, M. G. Kramer, Wyandotte Chemicals Corp.

The following chairmen were elected for the committees of the CSMA Waxes and Floor Finishes Division:

Administrative, H. J. Mellan, Durez Plastics Division of Hooker Electrochemical Co., North Tonawanda, N. Y.; commercial standards, Daniel Schoenholz, Foster D. Snell Inc., New York; membership, Frank J. Pollnow, Jr., Vestal Inc., St. Louis, Mo.; program, D. B. Peck, Fuller Brush Co., Hartford, Conn.; scientific, Donald E. Whyte, S. C. Johnson & Son, Inc., Racine, Wis. Sub-committees: C on technical literature liaison, C. S. Kimball, Foster D. Snell, Inc.; F on floor evaluation of wax emulsion floor polishes, Roland M. Avery, Jr., UBS Chemical Corp., Cambridge, Mass.; I on official test linoleum and other floor coverings, C. S. Kimball; M on preferred methods for wax maintenance of common types of floors and floor coverings, Earl Brenn, Huntington Laboratories, Inc.; S on specifications for raw materials, Bayard S. Johnson, Franklin Research Co., Philadelphia; T on manual of test methods, Thomas B. Smith, Simoniz Co., Chicago; W on methods for wet abrasion and removability of floor finishes, Carlton Sherbourne, Stanley Home Products Co.

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Celebrates 90th Birthday

Xavier Givaudan, chairman of the board of Givaudan-Delawanna, Inc., New York, and active head of the Givaudan organization, recently celebrated his 90th birthday at a reception, given by members of Givaudan plants, at Geneva. Highlight of the ceremony was the presentation to Mr. Givaudan of

Xavier Givaudan



the Cravate of Commander of the French Legion of Honor. Presentation was made by the French Ambassador to Switzerland in the name of the President of the Republic.

Kenneth W. Merkel Dies

Kenneth W. Merkel, 61, active in the essential oil industry for more than 30 years, died Mar. 3 in Fort Lauderdale, Fla., after a brief illness. Mr. Merkel served for 13 years with Colgate-Palmolive Co., New York, as a perfumer in its research department. He formerly had been president of Kenmer Development Corp. Surviving are his son, Kenneth W., Jr., of New Providence, N. J.; his mother, Mrs. William J. Merkel; a sister, Mrs. Arthur Beach, both of Scarsdale, N. Y., and two grandchildren.

Hollingshead Earnings Up

Net income and earnings of R. M. Hollingshead Corp., Camden, N. J., showed a substantial increase during 1956, it was reported recently. Net income rose to \$185,419, equal to share earnings of \$1.37, in the 12 months ended Dec. 31, from \$56,309 and 42 cents in the preceding year. Net sales, however, dropped slightly to \$15,659,000 from \$15,884,000, in 1955.

Dishwashing Film

A new training film on mechanical dishwashing entitled "Stop Feeding the Animals," recently was produced by DuBois Co., Cincinnati. The film compares dishwashing as done by the housewife to dishwashing as done in the kitchen of a large modern hospital.

Also covered in the film are proper maintenance of dishwashing equipment; measurement of detergent or other control of concentration; correct racking of dishes to be washed; the significance of wash and rinse water temperatures; and other methods of proper sanitation. The film is available for showing by groups, societies and other interested organizations. For further information contact DuBois Co., Cincinnati 3.

AIC Honors Flett

Lawrence H. Flett, National Aniline Division of Allied Chemical & Dye Corp., New York, re-



Lawrence H. Flett

ceived honorary membership in the American Institute of Chemists at a dinner meeting at the Hotel Commodore, New York, Mar. 11. During his 35 years of service with National Aniline, Mr. Flett has been credited with some 75 patents. He is also author of numerous scientific papers and co-author of several books, the most recent of which is "Maleic Anhydride Derivatives."

N. Y. Poisons Bills

A bill (1703) is pending in the assembly of the State of New York which calls for "creating a consumer's bureau in the state department of health for the purpose of protecting the consumer in the manufacture and sale of adulterated or misrepresented foods, drugs, cosmetics or health devices and to regulate traffic therein."

The committee is to consist of five members appointed by the Governor from a list, publicly nominated by the regents of the University of the State of New York.

Among regulations which the committee will be empowered to prescribe or repeal are rules on tolerances for poisonous ingredients; on allergy and susceptibility including that of the young, aged, sick, allergic, and susceptible.

Registration of proprietary products under the new bill will cost \$25.00 for each product and \$10.00 for renewal. Information required of applicants for a certificate of registration is exactly specified and labeling requirements are defined.

The Chemical Specialties Manufacturers Association requests members' comments on this bill.

An amendment is pending in the New York State assembly which calls for the labeling of containers in which poisons are sold and for recording such sales. Retailers and wholesale dealers are responsible for apprising the buyer of the poisonous nature of the substance he is purchasing. Labels must include the words "poison," name and address of seller, and "call your doctor immediately" in red ink. If passed the amendment (Bill 1497) will go into effect July 1.

New Washburn Floor Wax

A new wax designed for use on light-colored resilient floors, was introduced recently by T. F. Washburn Co., Chicago. Tradenamed "Marvax," the new product is said to provide maximum protection against dirt, water spotting, and black marking. It is also claimed to be slip-resistant. According to the announcement, "Marvax" is produced by a new process which synthesizes carnauba with a special plastic material to form a pure emulsion. Further information may be obtained from the company, 2241 Elston Ave., Chicago 14.

Lever Elects Connor

John C. Connor has been elected as comptroller of Lever Brothers Co., New York, it was announced recently by E. Lee Talman, administrative vice-president. Mr. Connor formerly was assistant comptroller and assistant treasurer in charge of the accounts department. He joined Lever 28 years ago as an accountant. He was named assistant chief accountant in 1939 and chief accountant in 1947.

Aerosol Publicity Set

A publicity and sales promotion campaign for aerosol products to cost \$25,000 will get under way about April 1 under the auspices of the Chemical Specialties Manufacturers Association. Forty-six companies, loaders, marketers and suppliers of raw materials and containers, have contributed to the campaign fund. Contributions were limited to members of CSMA. G. M. Basford & Co., New York advertising and public relations agency, will handle the promotion.

A committee of CSMA, the Aerosol Publicity and Sales Promotion Committee headed by Fred Lodes of Lodes Aerosol Consultants, Inc., New York, has been engaged for the past year in organizing the campaign and collecting funds. Actual handling of the campaign, however, will be in charge of a special steering committee of about 15 members of the Aerosol Division of CSMA, selected from contributors to the campaign fund.

Those who contributed include: Aerocide Dispensers, Aerosol Research, Aerosol Techniques, Inc., Airkem, Inc., Atlas Powder, American Can Co., G. Barr & Co., Clayton Pressure Pak, Continental Can Co., Continental Filling Corp., Crown Can Division, Dodge & Olcott, Inc., Dow Chemical Co., P. R. Dreier, Inc., Fairfield Chemical Division, Fluid Chemical Co., Fuld Bros., Inc., Fritzsche Brothers, Inc., Fuller Brush Co., General Aniline & Film Corp., General Chemical Division, Givaudan-Delawanna, Inc., Helene Curtis Industries, Inc., Krylon, Inc., Lodes Aerosol Consultants, Inc., McLaughlin-Gormley-King Co., Maryland Glass Co., Mojonniere Assoc., Nestle Le Mur, Owens-Illinois Glass Co., Penn Salt Manufacturing Co., Par Industries, Pesticide Sales, Inc., Peterson Filling & Packaging Co., Precision Valve Corp., Rison Manufacturing Co., Seaquist Manufacturing Corp., W. T. Rawleigh Co., Sprayon Products, Inc., John C. Stallfort & Sons, Stallfort of Penna.,

Inc., Tube Manifold Corp., Virginia Smelting Co., van Ameringen-Haebler, Inc., Western Filling Corp., Wheaton Plastics Co.

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Specialties Laws in Calif.

Three bills pertaining to chemical specialties have been introduced in California. California Assembly Bill 2021 would amend the Agricultural Code dealing with the application of insecticides, herbicides, etc. Time and conditions under which such materials may be used in different areas of the state shall be ruled upon by the Commissioner of Agriculture, who may require permits or official supervision.

California Assembly Bill 3697 would amend the Business and Professions Code to make it mandatory to employ a registered pharmacist in the manufacture, compounding, sale, or dispensing of any drug, poison, or chemical. The Chemical Specialties Manufacturers Association suggests that members represented in California should protest this bill.

Drugs salable by grocers, dealers, and vendors, generally, are listed in pending California Assembly Bill 3152, another amendment to the Business and Professions Code. The list includes insect powder and flypaper among many unrelated items. CSMA suggests that exemptions are not broad enough for the specialties industry.

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New Procter & Gamble Film

Procter & Gamble Co., Cincinnati, recently announced production of a new sound and color film entitled, "A Better Way." Documentary in style, the film describes various segments of P&G's overall operation such as manufacturing, research and advertising, and defines company policy governing departmental activities. This information is illustrated by presentation and answer of four of the 75,000 letters received last year by P&G concerning its operation. The 16 mm. film is in technicolor and has a running time of 29 minutes.

Automotive Specialties Laws

Legislation pertaining to specifications and sales of brake fluids is pending in Arkansas and Texas. The Arkansas bill calls for registration; issuance of permits, etc. It covers cancellation, refusal to issue or refusal to renew permits. Registration fee to permit manufacture, sale or distribution of brake fluids is \$50.00 for each permit or renewal. The bill makes it unlawful to manufacture, sell or distribute any brake fluid which is adulterated or misbranded, or which is not registered. Violation of any provision of the act is a misdemeanor. First offense shall be punishable by a fine of \$1,000 and the permanent cancellation of the offender's permit.

The Chemical Specialties Manufacturers Association has sent to its members a full version of the Arkansas brake fluid bill (House Bill 56) and urgently requests comments.

Texas Senate Bill 145 is an act "regulating the marketing of brake fluids in the State of Texas; granting certain powers to the Public Safety Director in connection therewith; providing penalties for the violation of the act; providing for the confiscation of brake fluids held or sold in violation of the act; and declaring an emergency." According to CSMA this bill does not raise any objectionable points.

In New Mexico an amendment to the bill regulating the sale of antifreeze is pending as House Bill 238. The amendment deals with penalties for violations and sets fines and terms of imprisonment. The full text has been sent by CSMA to its members.

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Boston BIMS Events

BIMS of Boston recently announced its schedule of activities for the first half of 1957. According to Hart Harris, Jr., of S. B. Penick Co., BIMS will hold a ladies night on May 4th and a golf outing on June 29. Both events will take place at the Weston Golf Club, Weston, Mass.

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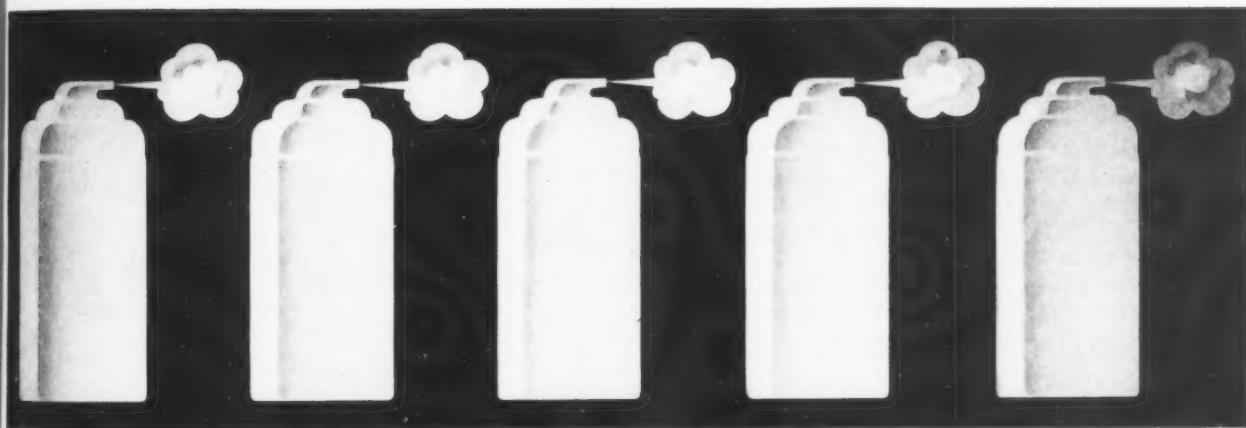
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Currently, special interest is on:

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Unique, *super-dense* bead. The first 40% active alkyl aryl sulfonate that is as dense as most flake materials. Dustless, free-flowing, non-caking. Easier handling. More salable mixes.

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The outstanding liquid detergent. Looks clean, smells clean. Excellent foaming. Very low haze-point. Emulsifies grease and oil. Compatible with anionic and non-ionic materials.

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GROCO 26 STRIPPED COCONUT FATTY ACIDS

Titre	26° - 29° C.
Color 5¼" Lovibond Red	2.5 max.
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Unsaponifiable	0.25% - 0.50%
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Acid Value	250 - 257
Iodine Value (WIJS)	7 - 15

Lefevre observed that tallow under the influence of sulfuric acid and supplemented by coconut oil yields fatty acids. Just eight years later, A. Gross & Company began to manufacture fatty acids for industry. Today, the Coconut Fatty Acids made by A. Gross exemplify the high standards of quality which research and modern production techniques have made possible. Shown in the table are specifications for GROCO 26-STRIPPED COCONUT FATTY ACIDS from which a major portion of the lower acids have been removed. Send for samples and catalog "Fatty Acids in Modern Industry."

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SULFONIC ACID

- LESS THAN 1% SULFURIC ACID
- *A new standard
of purity because of*
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Cold Processing in the sulfonation of alkylbenzene below freezing produces this exceptionally pure Sulfonic Acid. Pilot's high purity Sulfonic Acid opens a new field for chemical standards and specialties. Oil or water dispersable products can be made directly by mixing Pilot ABS-99 with a variety of bases and solvents. Formulations for liquid detergents, industrial cleaners, metal stripping agents and heavy duty liquids can be made more effective . . . *and manufactured at a lower processing cost by using Pilot's ABS-99 Sulfonic Acid, containing less than 1% Sulfuric Acid.*

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Lakeseal RESTAURALL utility detergent powder utilizes the unique dirt-suspending properties of CMC to keep restaurant fixtures gleaming bright. By adding Hercules® CMC to this and other detergent formulations, Finger Lakes Chemical Co. insures uniformity of cleaning action and dispersion of ingredients. Hercules CMC helps to 'float away' grease and grime particles loosened by detergent action, makes detergent formulations more effective.

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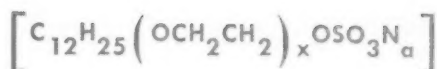


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Light-duty detergents for woolens and synthetics
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- The high electrolyte tolerance of SIPON ES permits the formulation of heavily-built

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- The high foaming property, cleansing power, rinsability and mildness of SIPON ES make it the ideal base for all types of shampoos.
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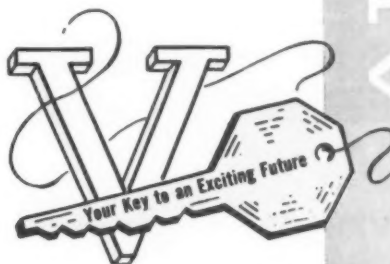
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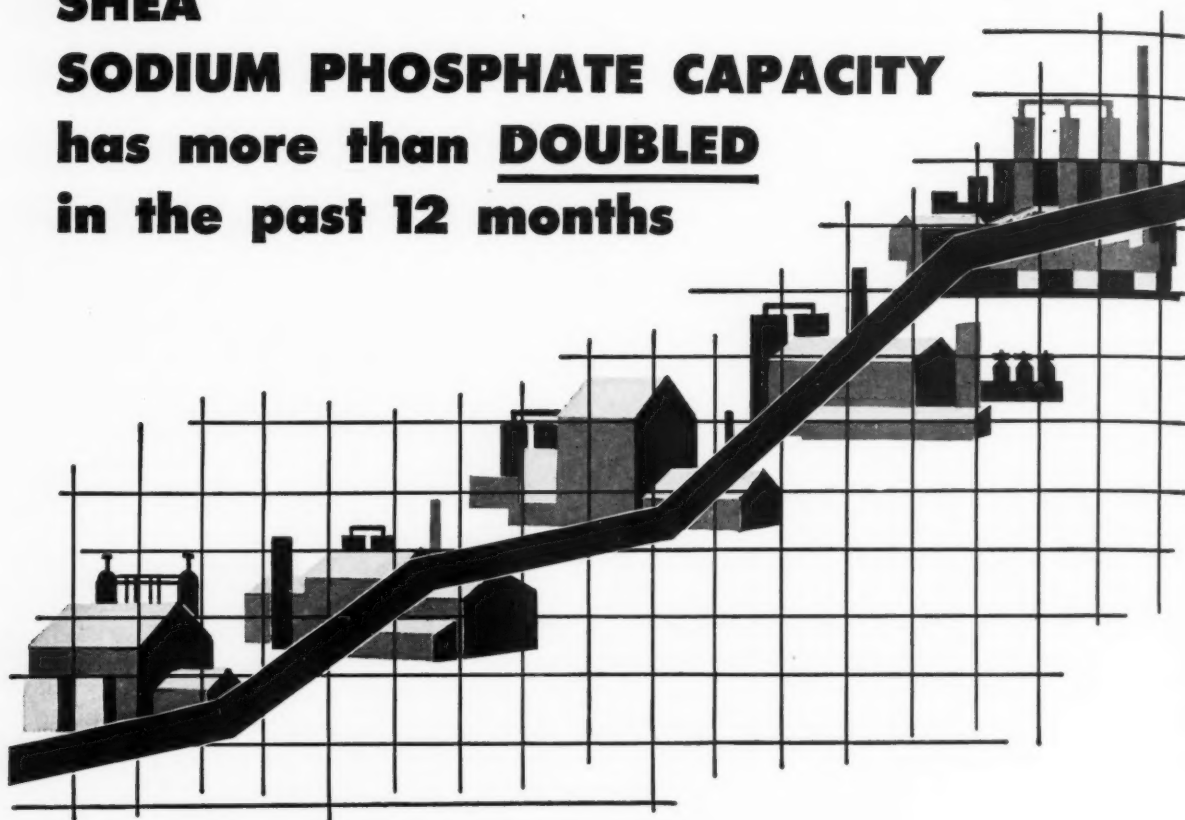


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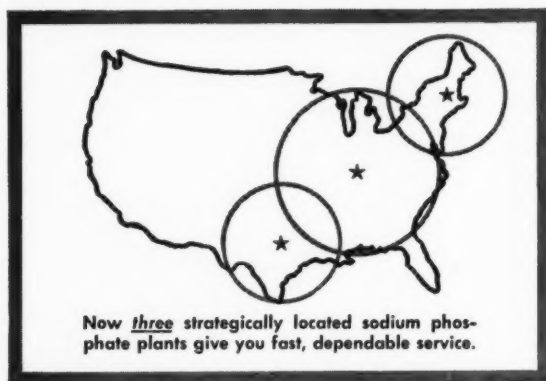
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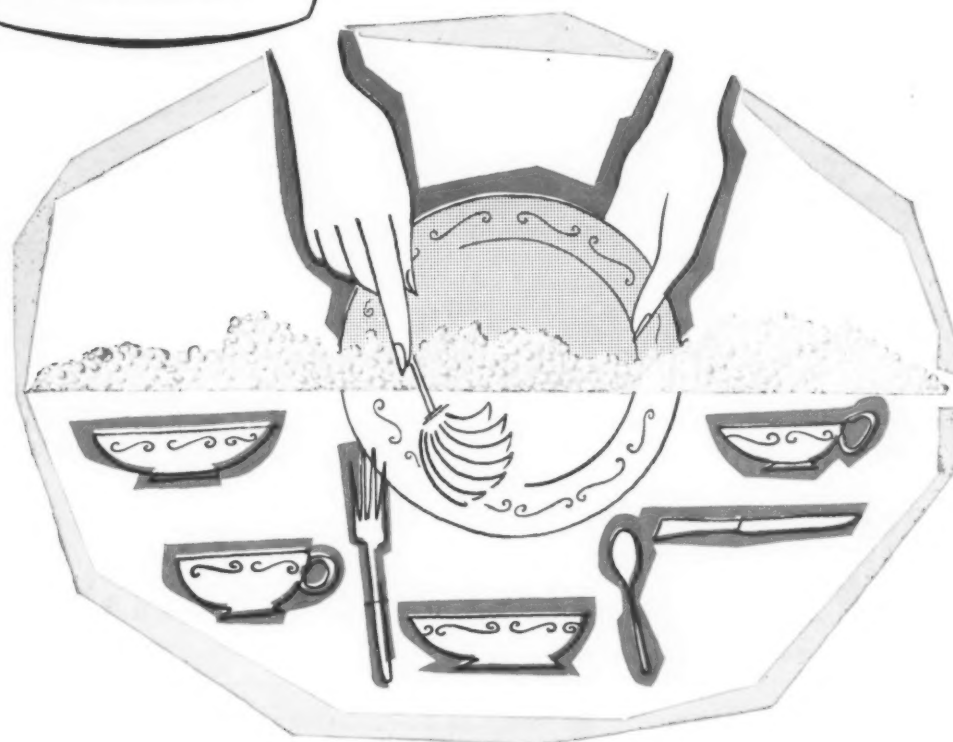


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... in brief

as the editor sees it . . .

 **HOME MADE STUFF . . .** From time to time, about every state in the country has in one form or another looked into manufacturing their own maintenance, cleaning and sanitation products. These run all the way from soft soaps down to disinfectants. For some reason, legislators believe that their states are being overcharged for such products and that they can make their own cheaper and better. If all the facts,—and we repeat,—if all the facts are laid on the table, they would probably have been proved wrong in every instance. Some states have undertaken manufacture and abandoned the idea subsequently. Others still make some or many of their own sanitation products. But at what cost? Who really knows?

Now the latest additions to the list of self-manufacture of maintenance products are Maryland, Louisiana, Florida and North Carolina. If they really look into all aspects of the matter, we feel that they are bound to abandon the idea. But will they? Could there not be politics involved, not necessarily true production costs? For, if all production, distribution and quality factors are honestly weighed, we feel that they will find the commercial supplier can furnish better merchandise cheaper. We don't believe that any state-operated chemical plant ever saved any state any money.

* * * * *


 **SOAP SALES . . .** More soaps and detergents were sold in the U. S. during 1956 than in any previous year of record. So says the Soap Association in reporting the results of its annual sales census. The Association figures for tonnage in 1956 approximate four billion pounds, an increase of 8.4 per cent over 1955. Of the totals, synthetic detergents, solid and liquid, gained 67.7 per cent of the market, an increase

of 16 per cent over 1955. Total soap sales continued to drop off in 1956 showing a decline of 4.8 per cent from 1955.

Our estimate places the Soap Association figures at probably 80 per cent of all soap and detergent production for the country. This could mean that the U. S. produced and used something like five billion pounds of all products in 1956.

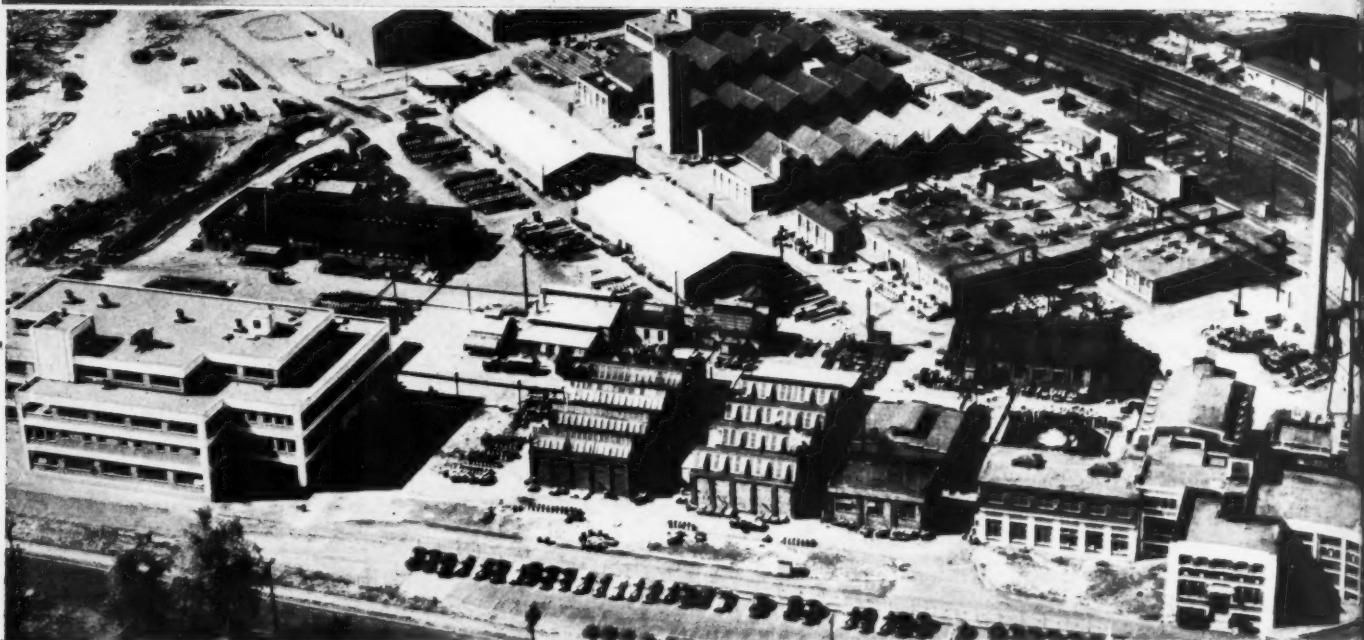
A notable exception to the downtrend in soap sales has been the continued rise in toilet soaps. As a matter of fact, toilet soap sales have shown a steady increase of about three or four per cent a year ever since 1953. The high state of the country's economy is the most likely explanation of this. Thus far toilet soaps have resisted the inroads of synthetics. How long this resistance can hold up in the face of revolutionary changes in the industry is problematical. This too could change in the years immediately ahead.

* * * * *

 **COSTS . . .** An examination of company reports in and around the chemical fields seems to show them of late fitting into a not too pretty pattern. Sales may be up, profits may be down, but in practically every instance costs show a marked increase. Without exception, we note the ever continuing upward trend in the cost of doing business. Until recently, the rise in sales and profits has been outstripping the rise in costs right along. As long as sales and profits are good, who gives a hoot about costs? But with the shoe on the other foot and profits shrinking, higher costs project themselves more prominently into the picture.

Obviously, the cost of doing business cannot continue to move upward forever. Sooner or later, there's got to be a show down and a true reckoning of where we go from here. As we see it, a lot of froth and doodabs which business and industry

Custom-made fragrances
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Give your product the odor appeal which assures customer acceptance at point of sale as well as at point of use. The skilled and experienced perfumers of Givaudan can create just such scents to meet the most exacting requirements of any type of soap or household product. To find the right fragrance for sales success, specify Givaudan.



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unconsciously have taken on during the past decade of flush times, will have to go by the board. We have a hunch that the honeymoon could soon be over. Stockholders, happy as larks in recent years and obviously spoiled, may begin to ask embarrassing questions. Maybe management should cock a weather eye on costs before they do and have some answers ready.


* * * * *

 **SUDS . . .** The newest gimmick in automatic clothes washers is a device designed to save the suds from one wash to another, to store said suds in a separate tank in the washer. When we first read about this new device for storing used suds, we wondered just how silly can you get. This wonderful urge for economy is a fine thing, no doubt, but isn't this carrying it a little too far?

Now Mrs. McGuff buys herself a brand new clothes washer equipped with everything from soups to nuts. Maybe it's a dollar down and the balance when they catch up with you; maybe not. But at any rate, she lays out a good chunk of money for the machine. This, we feel, implies that she can afford certain things and that a penny more or less for soap or detergent for the machine cannot be too important. The machine fellow, however, makes a big to-do about the great economy in this penny splitting. If soap costs were a heavy drain on Mrs. McGuff's budget, there might be an excuse, but obviously they are not.

Instead of this tank for saving used suds, we would suggest that this and other machine makers add more sturdiness to their equipment, at least enough so that the service repair man doesn't have to come around quite so often. That's where they might save Mrs. McGuff some real money.

* * * * *


 **SOAP STANDARDS . . .** The work of the American Standards Association attempting to set standards for a wide range of products including cleansers of all types and floor waxes has been going on for about a year. Progress as might be expected has been slow. The project, sponsored by the American Hotel Association, is aimed at setting minimum standards. And, therein, we feel lies one of the weaknesses of the whole effort. What incentive is there for

the manufacturer of a product exceeding minimum standards to improve it, or even to maintain its present quality?

The second basic weakness is the attempt to set standards or performance requirements which to be met would greatly increase the cost of a product. It's one thing to tell a manufacturer to make an item that will outperform anything else on the market. But it is an entirely different matter to produce the item in a price range that the average hotel keeper, or anyone else, would be willing to pay.

Standard branded items that the manufacturer is willing to back with his own name or reputation against competitive products still seem to us the consumer's best bet. With these, the consumer knows the manufacturer is making the best possible product at the lowest cost commensurate with quality.

* * * * *

 **SHELF SPACE . . .** "Retail shelves have become just about the most valuable property in the country today." This was the recent comment of John C. Newell, Jr. of the Folding Paper Box Association in discussing the sales appeal of retail packages. He went on to point out that in leading food chains, shelf space is worth about \$128 per lineal foot and that this high premium for such space is due primarily to the fact that about 6,000 new items per year are introduced to the food chain people.

That the pressure to obtain chain store shelf space is great, there is no doubt. But it seems to be getting greater all the time. Six thousand new items per year! If that does not represent constant pressure on items already in stock, we miss an easy bet. If half of the new items obtain their spot in the sun on chain store shelves, it means that an equal number of old products must be displaced. The importance of package design under such circumstances is quite apparent.

As for the smaller makers and marketers of soaps and detergents, the road seems to get rougher and rougher. In the spread of self-selection in all forms of merchandising, they are at a distinct disadvantage. It's a case of fighting to win a place in the sun and then fighting constantly to keep it. New packages, better packages, more advertising, — or out you go!

Your Cleaners "TIRE OUT" too Fast?

**"YOU NEED MORE
BUFFER CAPACITY"**

What's buffer capacity? It's the "staying power" of a cleaner or detergent—the ability to maintain a reasonably constant pH in spite of dilution and contamination.

Cowles DRYMET has excellent buffer capacity. Its pH varies only a little with changes in concentration. You can use this buffer capacity of DRYMET to give your formulations more cleaning power—more "staying power"



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for Technical Data

as the reader sees it . . .

Thanks from Mrs. Hirsch

Editor:

With your assistance, I would like to make the enclosed brief statement of thanks for the many expressions of sympathy I have received from the trade.

I should like to thank you most sincerely for the many kind and thoughtful expressions of sympathy I received from the trade since my husband's sudden death.

I want you to know that the business of Formula Floor Products, Inc., will continue. To aid me in the continuance of this business I have the able and experienced assistance of our two vice-presidents, William R. Fried and Harold P. Lefcourt, who have been with the business since its inception and will share management responsibilities.

We, at Formula, look forward

ward to the same warm and friendly cooperation that you gave Jack in the past.

WINIFRED B. HIRSCH,
President
Formula Floor Products, Inc.
Newark 5, N. J.

Cover to Cover

Editor:

As evidence that your publication is read from cover to cover, I noticed on the last page of the current issue of *Soap and Chemical Specialties*, that squib about Max Brown and the soap chipper. It was quite interesting and I enjoyed reading it myself.

If you happen to be in the habit of collecting mementos you might be interested in one of our soap chippers which is now considered somewhat of a collector's item. From our archives I have resurrected one and it's going for-

ward to you under separate cover, with our compliments. Undoubtedly, your wife may want to use it for grating cabbage!

MAX BROWN
Director of Sales
Fels & Co.
Philadelphia 42, Pa.

Our thanks to Mr. Brown for the soap chipper and the letter. The chipper goes into our archives for use by future historians of the soap industry. Actually, the chipper is much like a grater for cheese, vegetables, etc. It was used by housewives in the old days for making chip soap before its commercial availability — Editor.

The Eyes Have It

Editor:

Do my eyes deceive me, or is that a cut of Judson Dunaway, head of Judson Dunaway Corp., formerly Expello Corp., Dover, N. H., with the news item of the death of Frank Stanley Beveridge, president of Stanley Home Products, Inc., Easthampton, Mass., on page 142 of the January, 1957 issue of *Soap & Chemical Specialties*?

H. E. B.
Atlanta,
Georgia

Reader H. E. B. is so right. The cut that appears with the story of Mr. Beveridge's death is that of his friend and competitor, Judson Dunaway. To Mr. Dunaway and our friends at Stanley, we offer our humblest apologies. Although these men do not resemble each other, their poses for the two pictures were so similar that our new man in charge of cuts mistakenly misfiled Mr. Dunaway's cut for Mr. Beveridge's. Having close to 2,000 individual portrait cuts in our files, it is easy to understand how the mistake occurred. Ed.

Lewy Rejoins Lever

H. J. Lewy has rejoined the sales staff of Lever Brothers Co., New York, after an absence of two years, it was announced recently. Mr. Lewy has been appointed Kern County representative in charge of soap sales in Bakersfield, Calif.

Soup's On. . . Soup "snack bar" recently installed at Albany, N. Y., plant of B. T. Babbitt, Inc., is a real morale booster, according to Ira Mendelson, plant manager. Ten varieties of hot soup in individual eight ounce cans are dispensed by the push button vendor, made by Fedam Co., Elmwood Park, Ill. Ira Mendelson, right, discusses the innovation with blind concessionaire, Mike Bianco. The only feeding facility in the Babbitt plant, the "snack bar" is operated by the New York State Commission for the Blind. Babbitt gets none of the proceeds and furnishes heat, light, gas and space gratis.



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The basis for more lustrous hair is a better creme rinse. And the basis for a better rinse is a better base. Raymond's Pendit CA admirably serves both. Formulated on a quaternary ammonium compound, it is batch-tested to virtually eliminate consistency problems.

A white viscous aqueous paste containing between 20.0-22.5% quaternary (stearyldimethyl benzylammonium chloride) it is a superb hair emollient. Light in color, Pendit CA is a fine hair

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Non-cosmetically, Pendit CA is used as a fabric softener, textile lubricant, mold inhibitor, industrial deodorant and germicide. Dairy sanitizer and paper conditioner are other possibilities — in fact, wherever an emulsifier or wetting agent of unvarying physical properties is required. And it is stabilized against separation in the drum.

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Detergents . . . Cleansers . . . Soaps . . .

Dr. Daniel H. Terry, vice-president of Bon Ami Co., New York, at work in his laboratory. Dr. Terry, developer of "Jet Spray Bon Ami" aerosol cleaner, talks about the development and successful marketing of the product beginning on Page 51.

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GLYCERINE

Past, Present and Future

By E. Scott Pattison*

Manager, Glycerine Producers Association



It is becoming increasingly difficult to sustain the impression that some exceptional insight as to the future of glycerine can be obtained by masterminding the supply-demand situation for the past few years or months. As refined glycerine approaches the position of a manufactured product, rather than a processed commodity, annual changes have ceased to be highly dramatic. This is no doubt all to the good, so far as users of glycerine are concerned, but it makes life tough for this author. But it makes life even tougher, I'm glad to say, for the competitors of glycerine who were always drawing a regular Rocky Mountain range for the price-curve labeled "Polyol G," as compared with their own. About now, they must travel back pretty far to get to those hills. For three years now, we find that refined glycerine for spot buyers as well as that sold on contract has been available within a 10 per cent cost range. Furthermore, the direction of change since the end of 1952 has been contrary to the inflationary trend of most industrial products. Glycerine is freely available today at 15 per cent lower cost than at any time since early 1950, while in this same period, the general price index for chemicals has gone up by 11 per cent.

For years, certain technical men and purchasing agents have been saying: "If we could only count on glycerine, we'd spend

more time on glycerine-containing formulations." With so many other costs rising, this is certainly a good time for them to prove they really meant it! In particular, the application of glycerine to some substantial new or expanded use—say 25 million pounds a year or so—would fall within that area of expandable production in which supply costs would not be increased. This is quite a contrast with the effect of the anticipation of increased use which took place with the Korean crisis in the fall of 1950. Glycerine supply has become increasingly crisis-proof, as the recent Middle East flare-up has proved.

Because, undoubtedly, some of our readers are producers of crude glycerine from soap-making and fat-splitting, I'd like to disabuse them of any impression that they have been the losers by this decrease in commodity-psychology, or by the existence of new capacity to produce glycerine from propylene to meet an expanded demand. Chemical growth, all along, has been marked by the widening

stream of products which differ just enough from the original pace-setter in any field to edge their way into specialized segments of the market. Look what's happened to linseed oil in the paint field, for example, or to ethyl alcohol or acetone. Alternates and substitutes for glycerine try pushing in on all sides, as you know. In Table I are a few of them introduced over the past year or two. Pentaerythritol, for example, exceeded 60 million pounds per year in 1955 and 1956, almost entirely in markets comparable to glycerine. These and other well-known competitors for glycerine would have bitten-in far more deeply, perhaps, if it had remained a commodity of more limited availability. Everyone who makes even a few pounds of crude glycerine is benefiting from the fact that glycerine is in a position to hold all its major markets. It is naive to assume that a smaller glycerine supply would have meant a revenue rise for the crude-producer in this period of intense inter-chemical competition. More likely, the glycerine market would have narrowed down, and competitive materials with which glycerine is *not* interchangeable would have attracted more capital and more capacity. The glycerine situation in 1950 and '51, for example, gave PE a real boost.

Looking over some of the figures which the government collects on glycerine production and stocks, Chart 1, we find the production of domestic crude glycerine, along with glycerine from propylene, hit

Table I.
New Glycerine Substitutes

1. Trimethylolmethane	Heyden Chemical Corp.
2. Trimethylolpropane	Celanese Corp. of America, Chemical Div.
3. 1,2,6-Hexanetriol	Carbide and Carbon Chemicals Co.
4. Quadrol	Wyandotte Chemicals Corp.
5. 1,5-Pentanediol	Carbide and Carbon Chemicals Co.
6. 1,3-Butylene-Glycol	Celanese Corp. of America, Chemical Div.

* Paper presented Jan. 24, 1957, during 30th annual meeting Association of American Soap and Glycerine Producers, Inc., New York.

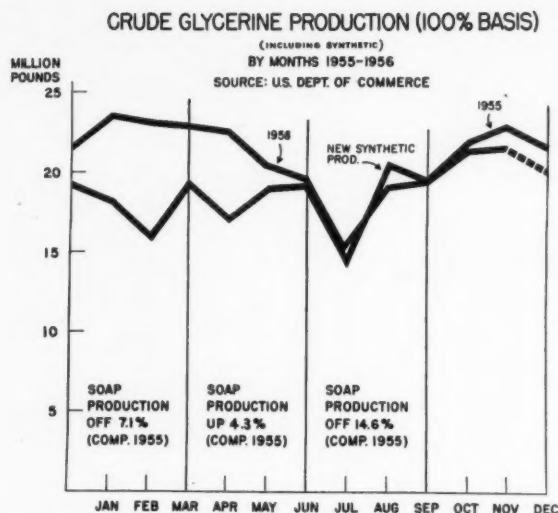


Chart I

a new high in 1956. Reduced to a 100 per cent basis—with an estimate for December—it totals 246 million pounds. The previous high was 228 million pounds in 1955. It appears that about 145 million pounds of this glycerine is from fats . . . produced as a co-product of soap-making, in fat splitting or fatty alcohol production. This gives 101 million pounds as an estimate of glycerine from propylene. (I like 101 much better than 100, because it sounds so much more specific!) From our association sales census, a decline in soap production in 1956 of not over six per cent is estimated. This suggests that the decline of natural glycerine production in the United States is leveling off, as was previously predicted. Of course, if the long-awaited detergent bar ever succeeds in giving toilet soap a knockout-blow, another drop would be in the cards.

Imports Continue

A RATHER notable factor in 1956 has been the continued importation of crude glycerine into the United States in a period of rising stocks and free availability. These imports are expected to total 16.8 million pounds on a 100 per cent basis. Exports of refined glycerine, which may reach 10 million pounds, have tended to balance the overall picture, but the pressure to dispose of foreign supplies of crude glycerine in the U. S. market has been strong. These offers of

foreign material have widened the differential in value between crude and refined glycerine, which of course has an influence on the value of domestic crude, even though the quality made available is modest.

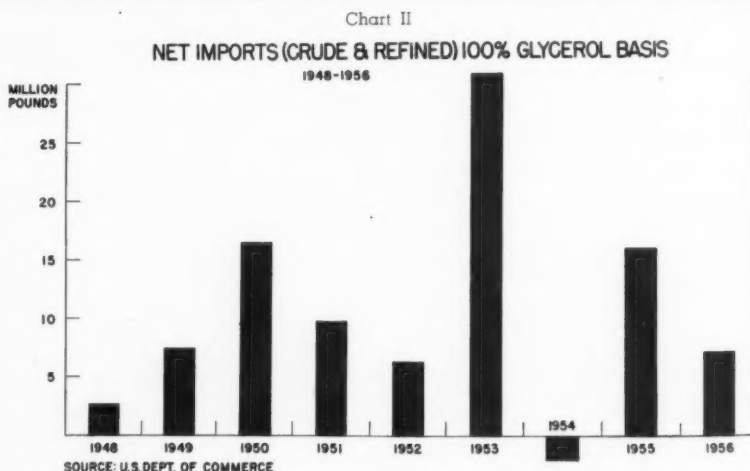
The net result, in 1956, has been an import balance of some seven million pounds. As shown in Chart II, this compares with net imports of 17 million pounds in 1955. It is, of course, a significant factor—as compared with 1954—in the total rise in stocks.

Two years ago, the refining of purchased crude had been brought to a point causing at least one major plant to cease operations. In 1956, operators refining purchased crude were presumably able to meet rising fuel and labor costs

and still operate on a satisfactory basis.

Among explanations advanced for the availability of foreign crude glycerine, reportedly offered as low as 16-cents a pound or so on a delivered basis, is one that runs counter to the familiar American picture. Reports from less highly industrialized countries show that soap output is rising with a rising standard of living. New soap plants, of a type permitting efficient glycerine recovery, are being built. The "shift to detergents" has not yet been substantial, particularly since inedible fats, exported from the United States, have been freely available at low cost. Indonesia, for example, has entered the world picture as a major seller of crude glycerine. At the same time, these areas have not reached a stage of industrialization in which they are glycerine-consuming, at least for the present. As in so many other respects, we can look to the United States of the "Twenties" as being comparable to where they stand today. During that period, glycerine was generally plentiful, and, indeed, it was then that the Glycerine Producers Association took initial interest in research and promotion for market expansion.

Of course, low cost foreign crude glycerine would appear to be a rather transitory and impermanent resource for the United States under present troubled world conditions. It frequently creates a



stir out of proportion to its tonnage. In the absence of America's synthetic glycerine plants, supplying steady tonnage on contract to volume users, it would almost certainly be more of a speculative than a stabilizing factor. Perhaps the one overall lesson to be remembered is this: The user of glycerine has been freed from foreign dependence, contracting for a "chemical" rather than a "commodity"; but the producer cannot escape the fact that he is engaged in a world market.

The trend in glycerine U.S. disappearance for 1956 and 1955 is shown in Chart III. Domestic disappearance is calculated at 236 million pounds for 1956, just slightly above the 1955 level. A usage level of 220 million pounds would have been considered highly satisfactory a few years ago. However, it fails to reflect that growth curve of five per cent a year or more to which chemical enterprisers have become addicted, due to an exceptional disappearance figure of 240 million in 1950. There is some possibility of distortion here, it seems to me, because of hoarding of unreported stocks that year. If we take a five year moving average of disappearance, we get a rising curve with a gain of about two per cent per year. (Chart IV).

Nevertheless the high stocks level at the close of 1956, has become somewhat of a whipping boy for the writers of chemical market columns. The acceptance of a par-

ticular stock level as a distress signal may be deceiving to those who turn to previous peak levels for precedent. There is a highly important difference between stocks as excess accumulations, and those which are built up deliberately as part of the *service competition* between an increased number of suppliers. One might ask, for example, as to what might now be considered the optimum level of glycerine stocks for good steady customer service. This is clearly not necessarily the same 50-million pound level which the market column writers have cited from some years back. First of all, we have been using more glycerine and a stock level is only large or small in relationship to the days

GLYCERINE DISAPPEARANCE

BY MONTHS 1955-1956
SOURCE: U.S. DEPT. OF COMMERCE

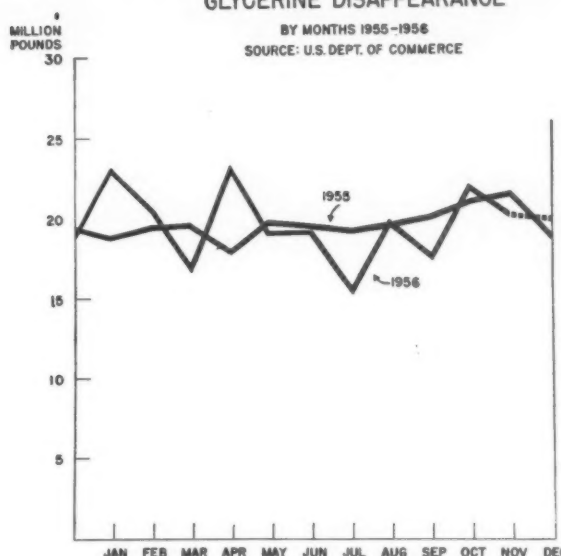


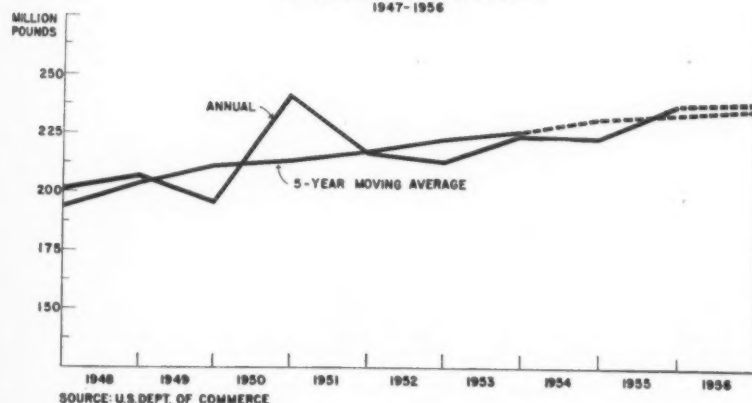
Chart III

of normal demand which lie ahead.

For one particular product, producers stock totalling 90 days of expected demand might seem ideal to meet customer service requirements in peak periods or emergencies. But in the case of glycerine, wide contrasts between suppliers in methods of production, location and distribution set-up make an average figure quite meaningless. Some of the individual producers, for example, have intimated that their own ideas of an optimum stock level go all the way from 20 days to 120 days. Just as there is no uniformity in the optimum, so there has been no uniformity in the top and bottom ratios reached. Operating conditions make one man's "bottom of the barrel" . . . say a 30-day supply . . . another man's normal stock. A change in stock points, or methods of transportation may alter the desired ratio of stocks to shipments. From government figures, it is easy enough to calculate the ratio of total glycerine stocks to disappearance (actual and estimated) in terms of supply days. It ranges from 110 days in early 1954, down to about 60 days in July 1955 and up to about 120 days about 13 weeks ago. Yet the stocks of individual producers vary from these

(Turn to Page 107)

Chart IV
GLYCERINE DISAPPEARANCE
1947-1956



SOURCE: U.S. DEPT. OF COMMERCE

World Consumption of Soaps

SOAP and detergent consumption of the civilized world today averages around eight pounds per capita as far as can be determined from limited information available. With a world population of some two-and-a-half billion people, this might indicate a total world soap use of twenty billion pounds annually if the world were wholly civilized. But there are certain peoples who use no soap at all, probably twelve to fifteen per cent of the world's population. There are still large numbers of people in Africa, Asia, and even in Latin America in this latter category. So a world soap and detergent yearly consumption of about seventeen billion pounds is probably closer to fact. Of this total, over a quarter is made and used in the United States.

Listed herewith are 36 of the leading nations of the world with their populations, pounds of soaps and detergents used per year and the per capita consumption. The information has been gleaned from various and sundry sources. Some has come from a recent meeting of the Congress of the West German Health Organization. Other facts were turned up at the 1956 meeting in Vienna of the Association Internationale de la Savonnerie. Other information has come to us from our German contemporary, *Seifen-Oele-Fette-Wachse*. An article based on an address by Roy W. Peet, manager of the Association of American Soap & Glycerine Producers, given at Rutgers University and published in the August, 1952, issue of *Soap & Chemical Specialties*, was also an important source. More recent Soap Association figures are also used. Figures on Japan and Russia were based on recent articles published in this magazine. Still

**Estimated at 17 billion pounds—
36 countries show average annual
use of eight pounds per capita.**

others were figures taken from back issues and arbitrarily extended in line with population growth.

Accuracy of Figures

UNDoubtedly, there may be inaccuracies in some of the figures given, but it is felt that they are about as close as it is possible to come based on information available today. In some instances, the figures given here differ appreciably from other sources, notably from some of those given by Peet in 1952. Attempts to check the accuracy of some figures with consulates of foreign countries met with little success. Apparently, no statistics on soap and detergent production or consumption are kept except by the world's leading powers.

Although all of the figures here are listed as consumption, actually many of the figures are reported as production in various sources. No attempt to differentiate has been made. It is assumed that all soap produced in any country was consumed in that country. Exports or imports have been ignored in the interest of simplifying the presentation of the figures. It was felt that among these 36 countries, the export and import factors would be minor in relation to the over-all totals.

Many smaller nations in various parts of the world have not been included in calculations here for the simple reason that their soap consumption is relatively small and no information regarding them is available. Whether the combined

output of all those countries omitted would total a billion pounds is a question. It does not appear that output would exceed this total at any rate.

No attempt has been made to break down world consumption according to soaps, cleansers and synthetic detergents. The figures given here are supposed to include all three groups. While synthetic detergents have taken over about 70 per cent of the American market, and have grown rapidly in the United Kingdom and Central Europe, many other countries still rely almost wholly on soap. While old-fashioned brown bar laundry soap, for example, has been the big loser marketwise in the American market, it is still the chief soap product of numerous markets elsewhere in the world. If a guess were to be hazarded today as to the world market for synthetic detergents, it might be a figure around five billion pounds or some 30 per cent of the world total soap and detergent market.

Eight Pounds per Capita

THE total consumption of all soaps and detergents in the countries listed is 15,861,000,000 pounds. The combined populations of these countries is 1,997,400,000. This figures out to about eight pounds per capita. If a combined date were given for these totals, it would probably be for 1954. If the additional half-billion population of the world were taken into consideration, most of it probably with a very small soap consumption or

s and Detergents

none at all, the per capita figure would probably be well under eight pounds. The problem is where to draw the line on exactly what we consider "civilized" peoples in figuring the average.

Soap and detergent consumption in various parts of the world follows a pattern that can be more or less expected. As Peet

pointed out, per capita soap use in countries whose economy is essentially agricultural is low. But there are exceptions, notably Argentina, Australia, Canada. Where the economy is chiefly manufacturing and industrial, soap and detergent use is high. And it might be added, that in the case of nomadic peoples, soap use is practically nil.

Soap is truly a product of civilization, the higher the degree of civilized refinements, the greater the per capita use.

Whether there is any definite relationship between national health and soap and detergent use is still a moot question with authorities in disagreement. However, in countries where soap use is high, this is usually the handmaiden of a higher type of civilization of which mass health protection is always an integral part. In short, high soap use and high health standards both stem independently from the same source. But the fact remains that the countries which use the most soap invariably have the highest level of national health.

World Soap and Detergent Consumption

	Population	Annual Use Per Capita	Total Use (in thousands of pounds)
Belgium	9,000,000	28.3	255,000
U.S.A.	160,000,000	27.8	4,500,000
Switzerland	5,000,000	26.1	130,000
United Kingdom	50,000,000	24.3	1,215,000
Australia	9,000,000	24.2	218,000
Canada	16,000,000	22.4	358,000
Argentina	19,000,000	22.0	418,000
Sweden	7,300,000	21.7	158,000
Germany, West	50,000,000	21.0	1,050,000
Cuba	6,000,000	19.8	119,000
Czechoslovakia	13,000,000	18.9	246,000
Denmark	4,500,000	18.8	85,000
New Zealand	2,200,000	18.8	41,000
Netherlands	11,000,000	18.7	206,000
France	43,000,000	18.6	800,000
Austria	7,000,000	18.6	130,000
Uruguay	2,700,000	13.2	36,000
South Africa	14,000,000	12.6	176,000
Hungary	9,800,000	12.3	120,000
Spain	29,000,000	11.6	336,000
Italy	48,000,000	11.3	542,000
Soviet Russia	210,000,000	10.6	2,226,000
Mexico	29,000,000	10.4	301,000
Greece	8,000,000	10.0	80,000
Eire	3,000,000	9.8	29,000
Brazil	56,000,000	8.9	499,000
Japan	87,000,000	7.2	626,000
Colombia	12,500,000	7.0	87,000
Dominican Republic	2,500,000	6.5	16,000
Venezuela	5,700,000	5.7	33,000
Guatemala	3,300,000	5.4	18,000
Philippines	22,000,000	5.0	110,000
Indonesia	80,000,000	3.8	304,000
Panama	900,000	3.4	3,000
India	360,000,000	0.6	210,000
Communist China	602,000,000	0.3	180,000
TOTALS	1,997,400,000		15,861,000

Industrial Use 16-18%

OF the world's total soap and detergent use, something like 16 to 18 per cent goes into industry, textiles, metal working and cleaning, commercial laundries, dry cleaning, sanitation and food processing, synthetic rubber, etc. In the United States, this figure over the years has generally been accepted as 20 per cent, but this is essentially an estimate. The balance of world soap use, 82-84 per cent goes into households.

It is quite apparent that the pressure of advertising and publicity is an important factor in soap and detergent use. This of course is based to a great extent on the economies of the countries under study. In other words, where the economy is of low status, where the people are poor, more money is spent for food, less for soap. But given equal economies, advertising obviously boosts soap consumption and is directly related to soap use. The same might be said for publicity. That the work of the Cleanliness Bureau of the American Soap Association, for example, has increased soap and detergent use, there is little doubt. Also, it has undoubtedly aided in extending and promoting their use in more remote places where soap consumption had previously been low. As

(Turn to Page 191)

The *Jet-Spray* Bon Ami

THE story of "Jet Spray Bon Ami", a light duty cleanser in aerosol form introduced last year by my company, could be that of almost any newly developed product that becomes successfully established in the consumer market. It could be a new and more effective insecticide, a new soap product, or a new and better synthetic detergent.

The story began, not in the laboratory, but with a market study of a number of consumer products. Consumer needs and marketing opportunities were then examined. We considered: What products does the consumer want? What does the product have to do for the consumer? How much can he afford to pay? We also determined the present market volume of such products.

As a result of this analysis, one group of consumer products, specifically liquid window cleaners, was considered worthwhile examining in more detail.

We found that over the past

Figure 1. Container used in consumer test panel.



By **Daniel H. Terry, Ph. D.***

Vice-President and
Director of Research and Development
Bon Ami Co., New York

few years, many types of products had been introduced to clean and polish glass, such as mirrors and windows, as well as tile and porcelain, painted and unpainted woodwork, enamel surfaces and the like. These products varied from clear liquids, liquids containing abrasives, to pastes and powders.

With the introduction of the clear liquid, or non-abrasive types, it was found that mirrors, windows and the like, could be cleaned quickly, simply, and without the messy fine dust that settles on furniture and window sills when abrasive types are used. The clear liquids may not do as good a cleaning job as the abrasive ones, but they are easy to use and the job can be done quickly and in one operation. As a result, the popularity of liquid window cleaners has grown at a continuous rate.

Other products, such as abrasive emulsion cleaners, have attracted equal attention, and acquired sizeable sales volume due to promotion and merchandising. But after a time, their sales decreased to a much lower level.

However, the liquid window cleaners have continued to hold their position and, according to a recent *Food Topics* report, their annual retail sales were approximately \$12 million.

About four years ago, we felt that there was a definite place in the market for a liquid window cleaner that would not only be competitive with, but also superior

to, other liquid window cleaners in cleaning ability.

Superior Window Cleaner

WE began our investigation with the idea of compounding a liquid window cleaner for household use that would have superior cleaning properties. Although this product was definitely superior in cleaning properties to the other cleaners, we felt that the housewife might find it difficult to notice the improvement, since it was a matter of degree and not of kind. In view of this, we felt that the product, in addition to being a better cleaner must have some property that would make its superiority immediately noticeable to the housewife.

We thus developed additional formulations, which not

Figure 2. Package as it was introduced in test markets.



* Paper presented during 30th annual meeting Assn. American Soap & Glycerine Producers, New York, Jan. 25, 1957.

Story

only demonstrated the improvement in cleaning properties, but also imparted a high polish and slickness to surfaces cleaned. This was accomplished by the incorporation of silicones. Silicones gave to these liquid window cleaner formulations not only improved wipe-off, soil removal and ease of cleaning, but also a definite improvement in cleaning, polishing, and overall efficiency.

As laboratory work progressed, various difficulties were eliminated one by one. Finally, a window cleaning formulation was developed that, in laboratory tests and under practical conditions, cleaned better and imparted a high polish and improved wipe-off, eliminated smearing, gave excellent rewetting and did not show any separation on standing. Of the many formulations examined, experiment #107 was finally found to meet all the requirements that were thought to be desirable in a window cleaner.

Although we aimed at the development of a superior liquid window cleaner, once the formulation had been determined, many applications in addition to windows, windshields, mirrors, television screens, etc., were uncovered. Through additional laboratory and practical tests, we found that formulation #107 was excellent for removing finger prints and greasy film from painted surfaces, such as painted woodwork, refrigerators, cabinets, stoves, etc. Furthermore, we found the formulation to be excellent for cleaning and removing water spots from tile, chromium, nickel, and brass surfaces.

With the formulation firmly established, and applications and uses for it well defined, the next step was packaging.

In 1936, a liquid window cleaner was introduced to the house-

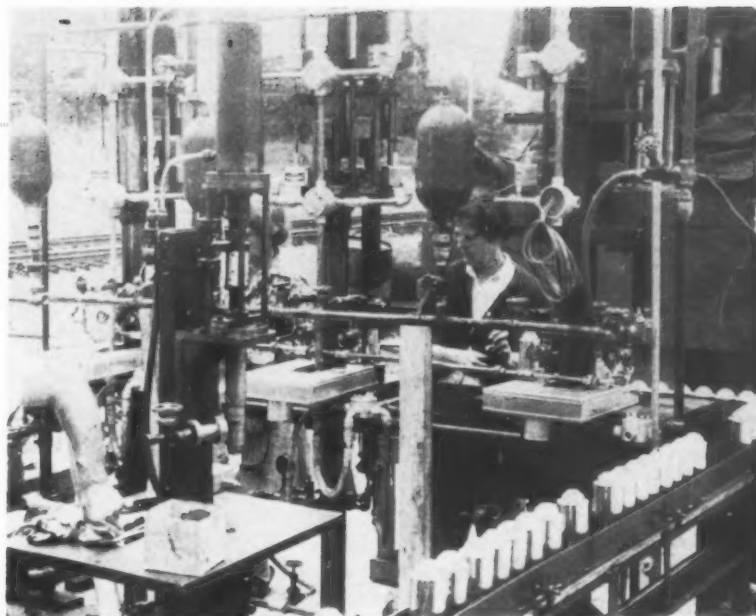


Figure 3. Outdoor aerosol filling line at Continental Filling Corp. which was operated as building was being erected around line.

hold trade in a glass bottle with a separate plunger type sprayer. In the 15 years that followed, practically all of the liquid window cleaners were packaged in glass bottles. Glass bottles were favored because liquid window cleaner formulations tended to cause corrosion in metal cans, which were the only other type of container available at that time.

Within the past four to five years, other types of containers had been developed, such as polyethylene bottles, specially lined metal

cans, and specially lined pressurized containers. Because of these developments a new trend in the packaging of water base liquids has gradually taken place.

One might call it coincidence, and others fortuitiveness, but at the same time as the product development work and packaging study was being carried out on formulation #107, aerosol product sales were growing amazingly fast. In fact, new aerosol products were like new freckles on a six year old red-head's face.

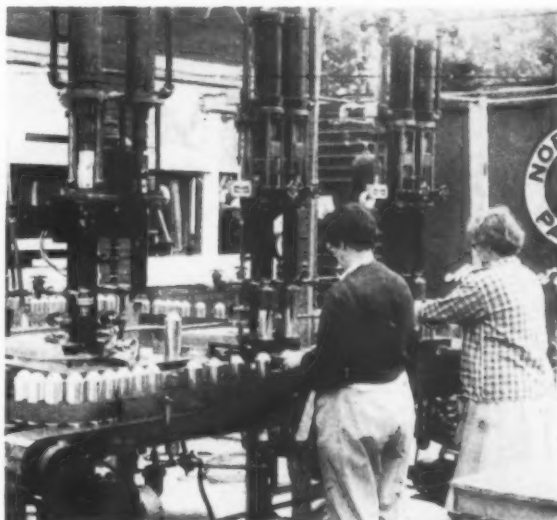


Figure 4. Another view of outdoor line filling "Jet Spray Bon Ami" at Continental Filling Corp.

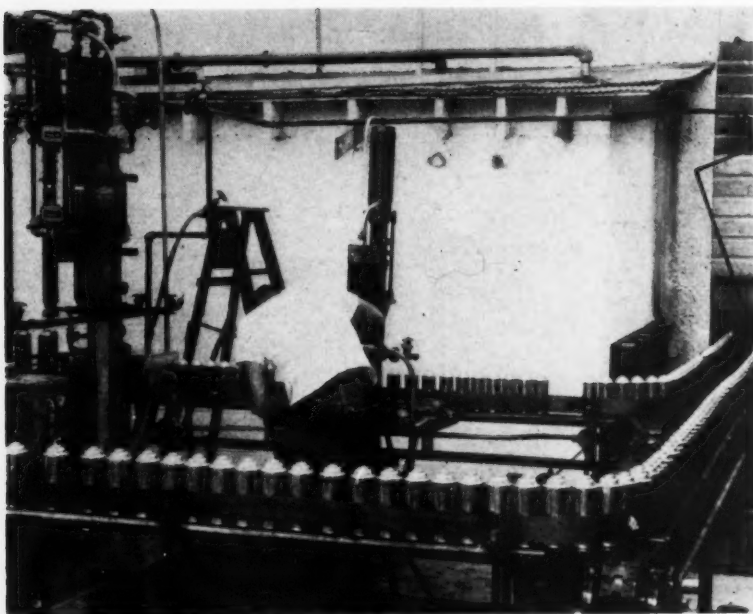


Figure 5. "Jet-Spray" aerosol filling line in open.

Everytime you looked there appeared to be a hundred more.

Aerosol Advantages

THE aerosol type packages appeared to have a number of distinct advantages over other methods of packaging formulation #107. We were looking for a package that would be unusual, but would still be convenient and economical. The aerosol package ap-

peared to have these prerequisites because it is always ready for use, it requires only the push of a button, most products can be dispensed in a matter of seconds. It is also effective and clean.

In fact, in 1953, there was a back-to-liquid trend in window cleaners as aerosol-dispensed products. The new aerosol products had a number of advantages over products in other packages, in that they

were dust free; required no hard rubbing, pumping, or pouring; did not drip, break or leak from cans.

Some of the earlier products introduced in pressurized containers fell by the wayside because of corrosion. Since we were aware of the corrosion problem in connection with liquid window cleaners, formulation #107 had been designed in such a way that it was thought that corrosion could be controlled or eliminated.

The first step in our investigation of the pressurized package for formulation #107 was an arrangement with General Chemical Company's technical service laboratory to package a number of samples of #107 in pressurized containers. In this work, a variety of propellants, different concentrations of propellants, different types of valves, and also a number of actuators were used. Many showed considerable promise, not only in lack of corrosion, but also in dispensing and cleaning. In accelerated storage tests and prolonged storage tests at room temperature, our product, packaged in a lined 12-ounce "Spray-Trainer",* showed no corrosion. At the same time, in a cooperative program with several aerosol contract fillers, a thorough study of our product in different types of cans with a variety of liners, mixtures of propellants, and elaborate storage tests was carried out.

As a result of our cooperative program with Continental Filling Corp., an aerosol contract filler, formulation #107 was successfully packaged in a pressurized container from which it could be dispensed in a desired form. Elaborate storage tests and further evaluations showed that formulation #107 packaged in pressurized containers would function properly, present no problems of corrosion, and remain stable over long periods of time.

Once physiological data,

* Registered trade mark of Crown Cork & Seal Co., Baltimore.

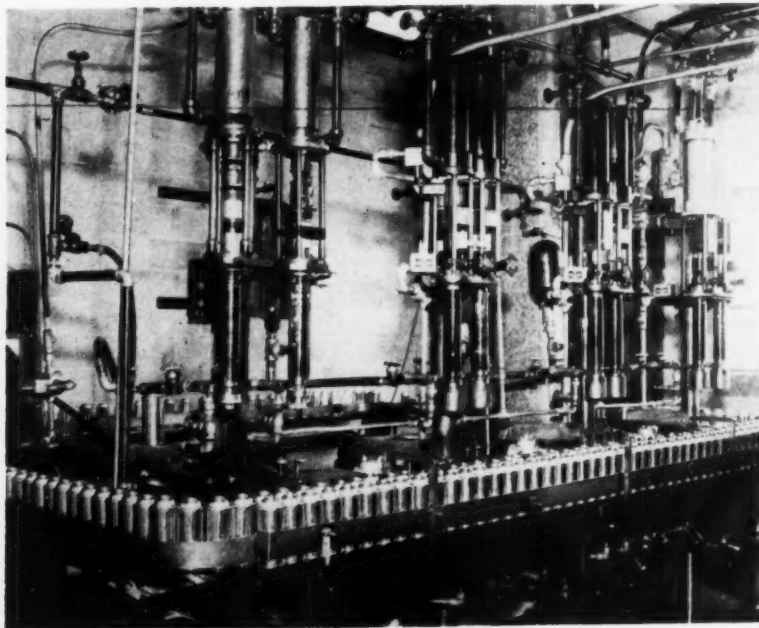


Figure 6. Filling line after building has been erected around it.

flammability, patent considerations and labeling were determined, the product was ready for consumer panel testing. A sizeable panel of housewives was set up. Samples were given to each, along with questionnaires. At monthly intervals, there were call-backs by regular interviewers with additional questions. This consumer test was undertaken to find out where the market for this new product would be, what the consumer would expect of it, what would be the most likely retail price, and to gather other information that would be invaluable in determining its potential.

The package and container used in the consumer panel test is shown in Figure 1.

The results of the test showed that eight out of 10 women who regularly cleaned with delayed-action watery type cleaners preferred formula #107 in an aerosol container. Also, eight out of the 10 women who formerly used powdery type liquid cleaners preferred the aerosol product. Specific reasons for preferring the aerosol formulation were tabulated as follows:

- 63 per cent said the aerosol product gets the job over in a jiffy.
- 82 per cent said the aerosol needs so little polishing.
- 84 per cent said the aerosol gets windows and mirrors completely clean without streaking.

Figure 8. Can and label as product was introduced nationally in 1956.

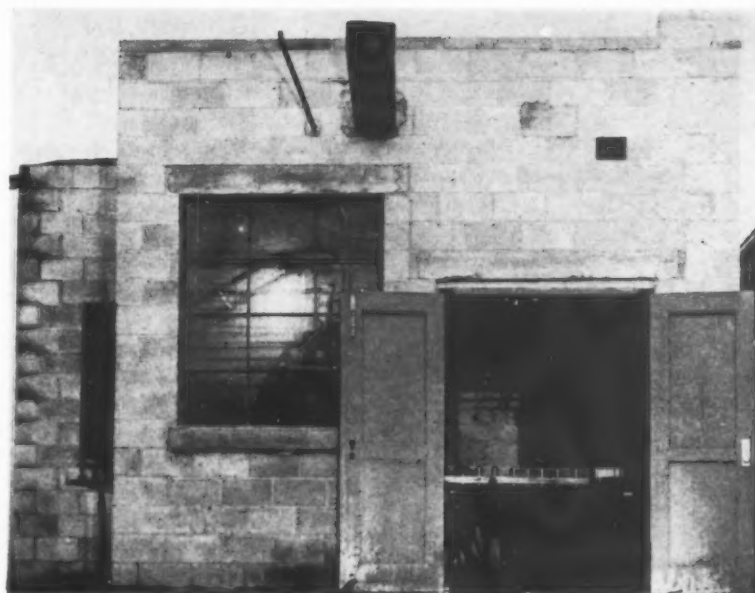


Figure 7. Exterior of building at Continental Filling Corp. in which "Jet-Spray Bon Ami" loading is now being carried on.

The test results were most favorable. In fact, the housewives' preference for #107 was far more than we had dared hope for or expected.

We then decided to introduce our aerosol window cleaner in three test markets, namely, Richmond, Va.; Syracuse, N. Y.; and Harrisburg, Pa.; in early April, 1956 as "Instant Bon Ami Win-

dow Cleaner," in a 12-ounce Crown "Spray-Tainer". Figure 2 shows the package as it was introduced in the test markets.

To introduce the product in the three test markets, we used radio, television, and newspaper advertising, and other merchandising methods. "Instant Bon Ami Window Cleaner" was readily ac-

(Turn to Page 103)

Figure 9. Demonstration of the stacking feature of "Jet Spray Bon Ami" can.



Soap and Detergent Sales

RETAIL sales of household detergents* through grocery stores reached a new high in 1956. Dollar volume last year was nine per cent greater than in the previous year and 44 per cent above the level of 1950. The most significant factor, however, is that since 1953 the pace appears to have quickened with the index moving from 115 to 144 (see Chart I), or up 29 points on the scale over the four year span, compared with an all-grocery store sales advance of 21 points.

The accelerated rate of gain shown in Chart I does not seem to be caused by any major price changes, but rather is brought about primarily by a gain in consumption, using the grocery store data as the measurement. This is illustrated on Chart II by the actual pound sales of the total household detergent group which show a significant rate of gain between 1953 and 1956.

The index changes for household detergents between 1950 and 1952 have been more or less ignored here due to the temporary influence

* The term "household detergents" used throughout this article refers to packaged soap and synthetic detergents, including liquid types, toilet soaps, white floating soaps and bar laundry soap.

PIONEERS

100



Composite Box Score — Pioneers versus Followers. 13 successful brands after a minimum of three years.

FOLLOWERS

51



25



created by the change in buying during and immediately following the Korean incident. However, since 1953 the index of total household detergent sales shown by the dotted trend line on the chart climbed approximately 24 index points compared with a six-point gain for population over the same period of time.

Since 1950, dollar volume of household detergents has increased 44 per cent (Chart I), but tonnage-wise sales have risen 29 per cent as shown on the index on Chart II. Percentagewise, Chart II shows that detergent tonnage sales moving through grocery stores increased almost a quarter since 1955. Half the gain was made in 1956 as sales rose 10 per cent over 1955, up from

117 to 128 points on Chart II. These same data, adjusted for population changes, appear in Chart III, on which we have an index on the per capita purchases of household detergents in grocery stores, both on a dollar and a tonnage basis, using 1950 as equal to 100 points. From the bars on the left on Chart III it is apparent that per capita dollar sales of household detergent products moving through grocery stores have risen 19 per cent or 21 index points since 1953. The bars on the right hand side of the chart, representing pound sales adjusted for population, show no basic change in level from 1950 to 1953. At that point the index rises and is climaxed by a nine point jump in 1956.

Examining the sales trend for the two main categories of household cleansers, packaged detergents versus toilet soaps, and leaving out the white floating and bar laundry type soaps, we find in Chart IV both main groups reporting continuous progress during the last several years, reaching new high sales levels during 1956. It is immediately apparent from observing the variation in the indices depicting tonnage sales trends for the

Chart I. Household detergent sales versus total grocery store sales. 1950 equals 100 on chart. Consumer dollar basis.

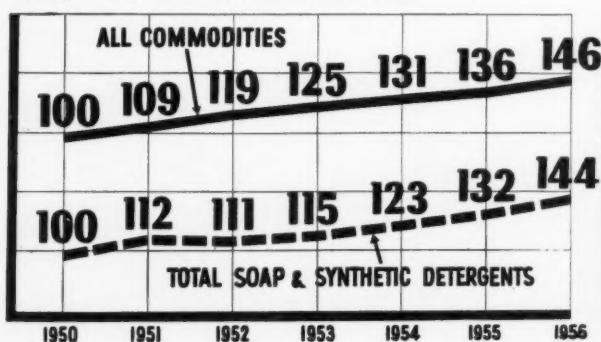
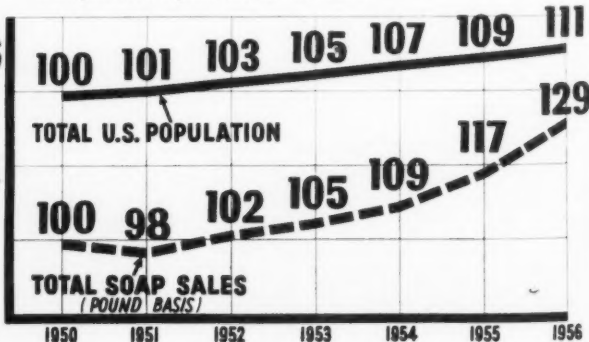


Chart II. Household detergent grocery store sales versus population changes. 1950 equals 100 on the chart.



in Grocery Stores

By **Burton V. LeVee***

A. C. Neilsen Co.

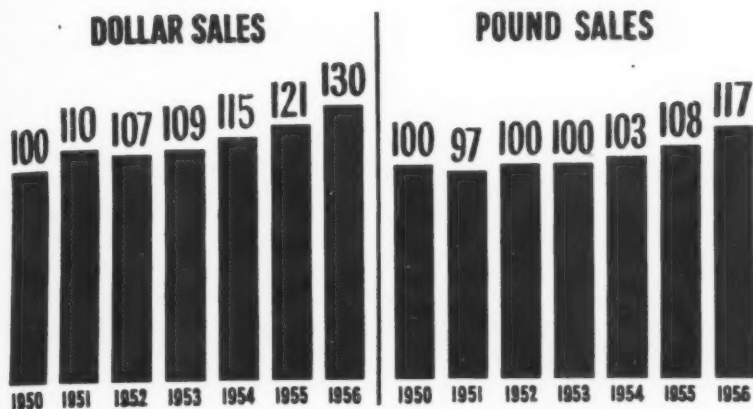


Chart III (above). Household detergent grocery store sales—adjusted for population change. 1950 equals 100.

Chart IV (below). Grocery store sales trend of packaged detergents versus toilet soaps. 1950 equals 100. Pound basis.

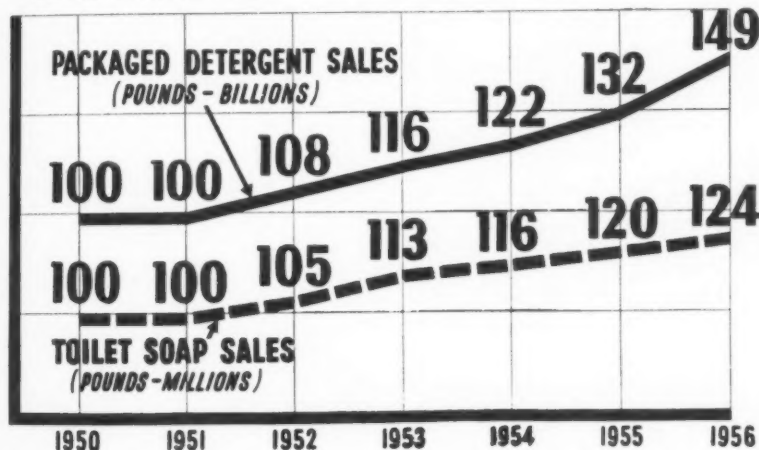


Chart V. Grocery store trend of packaged detergents and toilet soaps—adjusted for population change.



two groups that the increased rate of gain since 1953, which we noted previously for the total household detergent market, has been created primarily by more rapid expansion of the packaged detergent group. In terms of tonnage sales, Chart IV reveals that the packaged detergent classification has increased store movement almost 50 per cent since 1951. Furthermore, an advance of 17 index points was recorded in 1956. This is by far the best annual gain shown on the chart for the packaged detergent group and probably represents the best ever attained.

Toilet Soap Gains

OBVIOUSLY, by comparison, toilet soap gains have by no means been as spectacular. Nevertheless, increases in sales of toilet soaps have been steady, with the index increasing three to four points each year since 1953. The extent to which both packaged detergents and toilet soaps have enjoyed increased consumption (again using grocery store sales as the measurement) can best be gauged by examining Chart V, on which grocery store tonnage sales of both classifications are adjusted for population changes. The bars on the left hand side of Chart V, which represent the per capita purchase of toilet soap on a tonnage basis, indicate a gradual rise from 1950 through 1956 of about 12 per cent. Packaged detergent sales, which were reported to have actually increased 49 per cent since 1950, as revealed on Chart IV, have experienced a 34 per cent growth in actual volume after adjusting for population changes. The differences in

* Paper presented during 30th annual meeting, Assn. American Soap & Glycerine Producers, Inc., New York, Jan. 24, 1957.

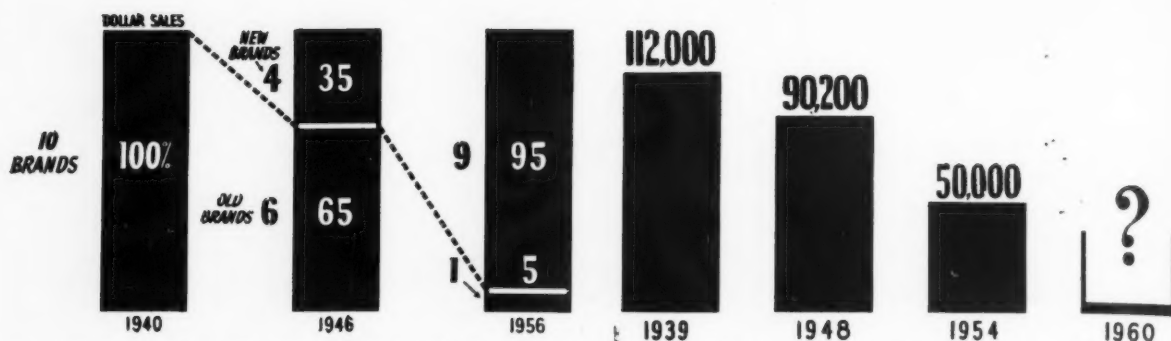


Chart VI. Turnover in leadership. First 10 brands of packaged detergents.

Chart IX. Trend in number of food stores required for 70% of total food store sales.

the rate of improvement for sales of packaged detergents, compared with toilet soaps, have been traced primarily to new product activity in the packaged detergent group,

on the packaged detergent market by stimulating purchases of automatic and semi-automatic washing machines and dryers. These products, according to the information

started late in the year 1954.

New Products' Impact

THE importance of new product developments and their contributions to increasing consumption of packaged detergents can best be measured by the fact that three-quarters of the market growth reported in soaps and detergents since 1953 was represented by new brands or new forms of old brands. Products which were not in stores in 1953 accounted for approximately one-fifth of the total grocery stores sales for all brands of packaged detergents during 1956. This record also is indicative of the consumer's receptiveness to changes in packaged detergents. Changes in leadership as a result of new product developments are a familiar occurrence in the soap and detergent industry.

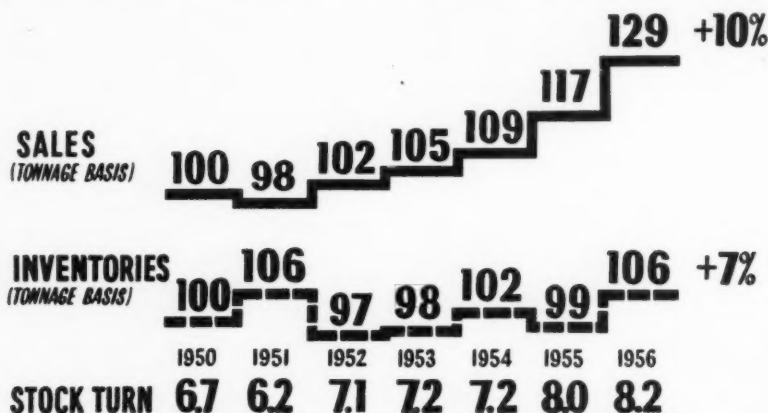


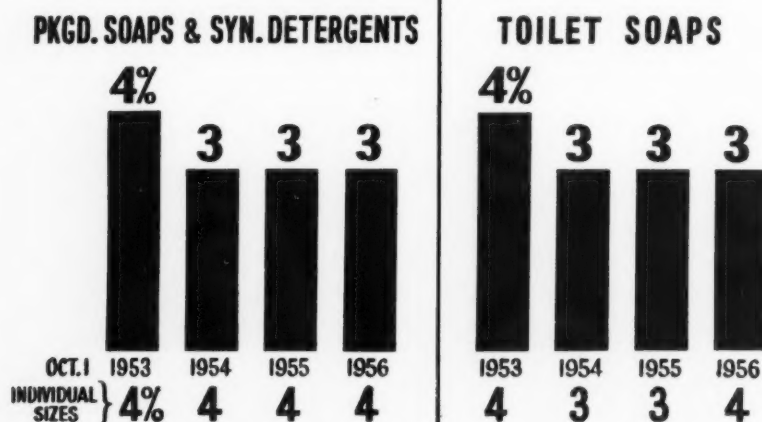
Chart VII. Sales versus retail inventory trends. All soaps and synthetic detergents. 1950 equals 100.

with an assist from the sharp rise in consumer purchasing power which started late in 1954.

The income factor probably created a greater direct influence

available, experienced a sharp rise in sales to consumers during the last two years. The increase in sales coincided with the sharp upturn in consumer purchasing power which

Chart VIII. Out-of-stock—percentage of stores. Averages of major brands.



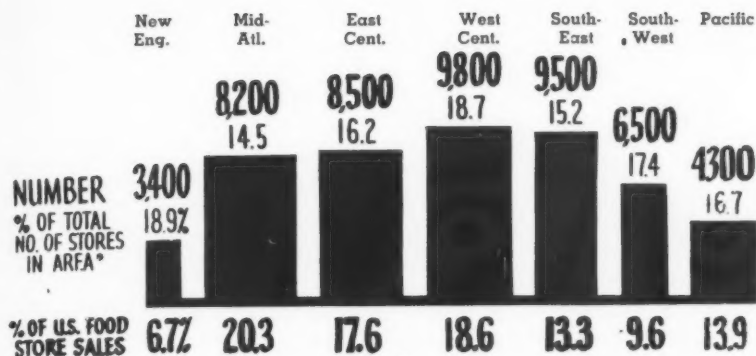


Chart X

Approximate number of food† stores required for 70 percent of total food store sales.

* Excludes stores under \$2500 annual volume.
Source: 1954 Census of Business.

† Includes grocery, combination, delicatessen and country general stores selling food.

sented in the top group by 1956.

Another area of change has occurred in the grocery store field that provides opportunities for developing new ideas pertaining specifically to distribution, packaging and selling tactics. New product developments and subsequent increased sales of household detergents in grocery stores have not materially changed total retail stock levels. While consumer sales on a pound basis of all household detergents, packaged and toilet soaps combined, etc., as indicated in the top trend line of Chart VII, have increased substantially over the past several years, only a relatively minor change in stock levels of retail stores has taken place. Since 1950, pound volume has increased 29 per cent, while retail stocks have gone up only six per cent. Actually, the biggest change since the build-up of retail stocks during the Korean War in 1951 occurred during the late months of 1956.

Stockturn Increases

THE significant fact shown on Chart VII is that retailers as a group have been able to increase detergent stockturn consistently over the past several years. This means, of course, that profit per dollar invested in household detergent inventories has gradually crept up. To illustrate this point, on the bottom of Chart VII is shown the actual stockturn represented from 1950 to 1956. The data show that in 1950 retail stocks were turning over approximately 6.7

times per year. By 1954, this had increased to 7.2 times, reaching an all-time high in 1956 with inventories turning over approximately 8.2 times at the current rate of sale.

Despite the fact that grocers' supplies of household detergents have increased, this has been accomplished with no appreciable change in the average out-of-stock of specific brands or package sizes. Average out-of-stock of major brands during the past four years is shown in Chart VIII. Packaged soaps and detergents and toilet soaps are shown separately. Beneath the bars are shown the average out-of-stock for individual package sizes of both groups of products. Out-of-stock figures for brands of both packaged detergents and toilet soaps have actually remained at a low level of only three per cent. The level for individual package sizes in each case shows out-of-stock figures of no more than four per cent. In each instance it is our belief that these out-of-stock figures represent irreducible minimums.

From an examination of inventory trends and out-of-stock levels in 40 other commodity classes on which data were available it was found that generally the same conditions prevailed as with soaps and detergents. These data give a fairly accurate picture of the changing physical characteristics of retail grocery stores which, according to figures of the Bureau of the Census of the U. S. Department of Commerce, are growing larger in volume and fewer in number. The Census Bureau figures for 1954

show that the number of grocery stores in the U.S. for that year had dropped considerably since 1948. At the present time there is some confusion as to the extent of the drop. According to the latest Census Bureau figures, in 1954 there were approximately 305,000 grocery stores in the U.S. Of greater importance than the total number of outlets is the fact that in 1954 a little over 50,000 grocery stores controlled approximately 70 per cent of the total grocery volume in the U.S. Our best estimate of the number of effective grocery stores at this point is that 70 per cent of all grocery business can now be reached by no more than 47,000 stores. We believe that the 70 per cent figure is even higher if the same type of computation is made for household detergent volume alone.

Fewer Grocery Stores

CHART IX shows how dramatically the number of outlets required to cover 70 per cent of the grocery store business in the U.S. has shrunk since 1939. In that year, 112,000 outlets were required to cover 70 per cent of the grocery store business. By 1948, this had dropped to 90,000 stores and by 1954 had fallen to a little more than 50,000. According to the Census report, about two-fifths, or a little over 19,000 of the outlets in the 1954 figures, are chain stores, with about 31,000 independents. There seems little doubt but that this number will be still further reduced by 1960. The extent of future reductions is, of course, a matter of conjecture. There have been published estimates that predict that by 1960 as few as 25,000 outlets will account for 70 per cent of total grocery store sales. However, we believe that the figure will be somewhat higher, or approximately 37,000 outlets by 1960.

Projecting total grocery store sales volume to 1960, in line with the expected income gains, gives us an estimated total volume by that year of somewhere around \$51 billion. If we take 70 per cent of that volume and divide it by 37,000

stores, we have an average store sales volume of about \$1,000,000. The implications of this contracting universe are self-evident from the standpoint of distribution control, importance of packaging, in-store promotions and displays, and general sales force tactics and control.

Based on the 1954 store count, we have also compiled the same type of information (Chart X) for each of the Nielsen Food Index territories. Among the interesting facts shown is that approximately 3,400 stores in New England account for 70 per cent of the total food store sales in that area. This represents only 18.9 per cent of all New England grocery combination, grocery-meat delicatessen, and country general stores with food, excluding stores having under \$2,500 annual volume.

In the Middle Atlantic territory, which includes metropolitan New York, 70 per cent of the food store sales can be covered with 8,200 stores, or 14.5 per cent of all the stores in the area. If we separate the New York market, which is not shown on Chart X, the Middle Atlantic territory can be covered with 2,800 stores or 14.2 per cent of the total.

To reach 70 per cent of the grocery store business in the east-central territory would require 8,500 outlets, or 16.2 per cent; in the west-central area, including the Chicago market, 9,800 stores, or 18.7 per cent, do 70 per cent of the food store sales volume. To obtain almost three-quarters of the grocery store business in metropolitan Chicago would require 1,250 stores, about 14.3 per cent of the total number. In the southeast, 9,500 stores are needed to cover 70 per cent of all the grocery volume, while in the southwest the figure is 6,500, and on the Pacific coast 4,300 stores, or 16.7 per cent, do 70 per cent of the grocery store business in that area.

The variation in percentages required to cover 70 per cent of the market in the various sections of the U.S. is significant. The range

is from the 14.5 per cent of the total number of grocery stores in Chicago, to the high of 18.9 per cent in New England. This highlights the need for consideration of individual sections.

Incidentally, the information contained in Chart X can be based on 60, 80 or 90 per cent, or any desired coverage percentage, depending on an individual situation. It can also be based on several tiers of such groupings so as to tie in with plans for different frequency of sales calls according to the importance of each store size in the area. Further, the data can be split by chain versus independent stores for still more detailed planning of manpower.

(Turn to Page 111)

—★—

New Carbide Ethylene Unit

The new petrochemicals facilities built by Carbide and Carbon Chemicals Co., New York, at Torrance, Calif., are now on stream, producing ethylene oxide, ethylene glycol, and polyethylene. This was announced by D. B. Benedict, Carbide president, when 500 representatives of potential consumer industries were invited to inspect the Pacific coast's first petrochemicals plant, recently.

Located on a 140-acre site, the new plant is adjacent to General Petroleum Co. which supplies much of the petroleum gas which Carbide uses a source of ethylene. Carbide has similar facilities at Seadrift and Texas City, Tex.

In Torrance the firm has invested two million dollars more than would usually be required in equipment to avoid air pollution, following recommendations made by the Los Angeles Air Pollution Control District.

This year, close to a billion pounds of ethylene oxide will be produced in the U.S. From ethylene oxide more than a 100 derivatives can be made. Of these, the most important and one of the first to be made commercially is ethylene glycol, base product for automotive anti-freezes. Actually nearly

half of the ethylene oxide produced goes into ethylene glycol.

Combined with ammonia, ethylene oxide forms ethanamines, widely used in the detergent and cleaning compound industry, as lubricating oil additives, in textile specialties, etc.

Polyethylene's largest use is in the form of film, most of it in the packaging field, where it is also used as material for squeeze bottles, and in linings for industrial shipping containers. Polyethylene coatings on a variety of packaging materials consumed about 27,000,000 pounds of resin last year. Polyethylene's importance as a wrapping material is enhanced by the fact that it can be printed and, according to Carbide, is the least expensive on an area basis of all plastic packaging films now on the market.

Union Carbide has been licensed to make polyethylene by new low-pressure techniques and is currently constructing two new plants at Institute, W. Va., and Seadrift, Tex., equipped to manufacture low-pressure ethylene. New technological improvements for olefin polymerization developed in Union Carbide's own laboratories and pilot plants will also be employed at these new factories.

Polyethylene produced by low-pressure technique differs from the high-pressure product. It has additional strength, stiffness and resistance to heat distortion and vapor transmission.

—★—

Dow Buys in Mexico

Dow Chemical Co., Midland, Mich., has purchased a 50 percent interest in Productos Quimicas Mexicano, S. A., producer of caustic soda, it was announced recently by Leland I. Doan, president of Dow. According to the announcement, present plans call for immediate doubling of the Mexican firm's plant capacity. Productos Quimicas Mexicano, which also manufactures chlorinated compounds, is the largest producer of caustic soda in Mexico. The firm was founded 20 years ago.

see Shulton

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New formula and new package for an old favorite, "Lysol" disinfectant of Lehn & Fink Products Corp., New York. Lighter in color, and non-toxic, new "Lysol" easy-grip bottle features new label design using traditional colors. Company history begins on page 82 of this issue.



Legislation . . .

DURING 1957, some 47 state and territorial legislatures are or will be in session. Congress is also meeting. Already many new bills affecting manufacturers of insecticides, disinfectants, automotive chemicals and numerous other chemical specialties have been introduced. The business of every chemical specialty manufacturer in the country in some way will be touched by this legislation if it becomes law.

For over forty years, the Chemical Specialties Manufacturers Association has been the legislative watch-dog of its industry and has vigorously opposed what it considers bad or unfair legislation. The current legislative year is no exception.

Over the years, CSMA has kept its members closely posted on new proposed legislation and what it means to the individual manufacturer. Today, this function of the Association, in the light of the ever widening circle of new proposed laws, is more important to its membership than ever.

If you are interested in being promptly and accurately informed of legislation which may affect your business, membership in CSMA might be invaluable.

H. W. HAMILTON, *Secretary*



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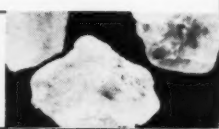
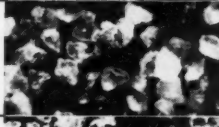
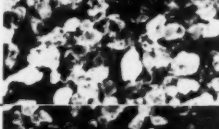
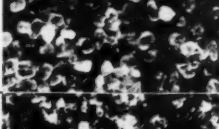
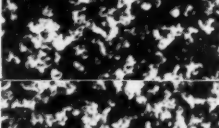
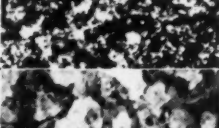

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Velsicol will also pay your salesmen a special bonus of \$2.00 for every display they help set-up . . . whether it is a winner or not. Your men can earn extra money and make a minimum sale of five cases of your insecticide at the same time!

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- 2 Displays will be judged for originality, attention value, and merchandising effectiveness.
- 3 For every dealer prize, a special cash prize will be awarded to the salesman who helped make the entry a winner!

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The advertisement features two strips of material, possibly fabric or paper, crossed in an 'X' shape. On the top strip, there are illustrations of a mosquito and a cockroach. On the bottom strip, there are illustrations of a tick, a flea, and a beetle. The strips appear to be pieces of material that have been treated with the insecticide, showing the insects that have been killed.

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Analysis of

Volatile Aerosol Constituents

Gas chromatography can be a powerful new tool not only to improve present aerosol products but also for research and development of new ones

By M. J. Root and M. J. Maury*

G. Barr & Co.

Chicago

ANALYZING the volatile components of an aerosol product has proven to be extremely difficult and time consuming when conventional techniques are used. We may determine the pressure or the specific gravity and arrive at a very crude analysis of the propellants present. Although fluorinated hydrocarbon mixtures have been commonly analyzed by both mass spectrometry and infrared spectrophotometry, the presence of other volatile components makes even these costly methods of little value.

For example, quantitative determination of ethyl alcohol in the presence of trichlorodifluoromethane and dichlorodifluoromethane presents several difficulties. Although ethyl alcohol and dichlorodifluoromethane, which boil at temperatures of 176° F. and 74.7° F., respectively, can be separated readily by fractional distillation, the presence of dichlorodifluoromethane, which boils at -21.6° F., introduces a complication. Not only must the distillation flask, column and receiver be kept under a very high pressure (80#/sq. in.) but the receiver, in order to condense the low boiling material, must be kept below -21.6° F. Furthermore, enough sample is required to fill not only the distillation flask but the fractionating column. The fractions must then be weighed and

identified either by infrared or mass spectrometry. For one or another of these reasons this technique has not been carried out by many people.

Analysis of not only the liquid phase but also the gaseous phase of an aerosol product is many times desired. Also, it would be of great value to be able to determine the amount of air present in both the gaseous and liquid phases. All of these difficult operations can now be carried out readily and easily with an instrument which will take a small gaseous or liquid sample, separate it into its components, measure the amount of each, complete the operation in a few minutes with an accuracy of .25 per cent, permit the recovery of each component, require no further attention once the sample is introduced, and be ready to receive another sample without delay. Now that we have such an instrument, it is being called the greatest analytical advance in the last decade. The instrument that will do this is called a Gas Chromatograph and the process is called gas chromatography.

Background

CHROMATOGRAPHY had its beginning when the Russian botanist, M. Tswett (1), in 1906 observed that a mixture of colored solutes could be separated by selective adsorption during passage through a tube containing a suitable adsorbent. Since this discovery, many advances have been made,

and this principle with modifications has been successfully applied to many fields requiring the separation and purification of complex organic and inorganic compounds. The prefix, chroma-, soon lost its significance since non-colored solutes were soon handled by chromatography.

The earliest application of the techniques of chromatography to the separation of gases and vapors by using stationary solid adsorbents and a moving gas (gas adsorption chromatography) dates from 1942 (2). Gas-liquid partition chromatography with which we are concerned here, was first used in 1951 by James and Martin (3) for the separation and analysis of mixtures of volatile fatty acids in tissues. The popularity of this method is testified to by the publication of more than one hundred papers on the subject in the last four years.

Gas-liquid partition chromatography is the separation and measurement of the components of a mixture by passing the mixture through a column in a stream of gas. The column, made of copper, glass or stainless steel tubing, is filled with an inert material called the support. The inert support, "Celite"* or firebrick, is coated with a high boiling organic liquid such as hexadecane, di-n-butyl maleate, or silicone. Because different equilibria exist between the mobile phase (carrier gas and sample) and the stationary phase (liquid coated sup-

* Paper presented Dec. 4, 1956 during 43rd annual meeting, Chemical Specialties Manufacturers Assn., Washington, D. C.

* Registered trade mark, Johns-Manville Corp.



Figure 1. Front view of gas chromatograph.

port), the components will separate according to their individual equilibrium constants.

More simply, each component in a mixture has its own affinity for a given column material. Therefore, it will cling to that material for a time characteristic to it alone and to no other component. The time during which it clings to the column before it is driven out by the carrier gas is called its retention time. With a given temperature, carrier gas and flow rate, column material and length, a component will always have the same retention time. Since each component has a unique "clingability" or retention coefficient for a given column material, it will stay a longer or shorter time in the column than other components in the mixture. Eventually, all components will be driven out by the carrier gas, one by one. And as each emerges, a sensing device, usually a thermal conductivity cell, measures its concentration. The result is a series of symmetrical peaks on a recorder. The position of the peak along the ordinate or time axis is the qualitative value—the time the component first appeared at the detector and how long it took to come out. The area of the peak, or its height, is a measure of its concentration in the mixture.

Figure 1 is a front view of the Gas Chromatograph made by the Beckman Division of Beckman Instruments, Inc. The five knobs on top of the instrument are respectively as follows:

- (1) Coarse current control.
- (2) Fine current control O — 400 ma. With helium as the carrier gas, 250 ma is normal. For trace analysis, 350 ma. With nitrogen or air as carrier gas, 150 ma is normal.

- (3) Zero control. The zero control is used to balance the detector cell filament bridge, adjusting the Gas Chromatograph electrical circuit so that the recorder pen is at zero when carrier gas is flowing through the instrument.
- (4) Sensitivity Control. This permits selection of a sensitivity value at which the output trace will be sufficiently high for good analysis and interpretation without exceeding the chart range at peak value. Position 1 gives the greatest sensitivity, then in decreasing order 2, 5, 10, 20, 50, 100 and 200.
- (5) Polarity switch. This switch turns on the power to the instrument from the six-volt storage battery and selects the polarity of the output of the recorder. With helium as the carrier gas, all samples except hydrogen will give relatively positive chart indications with the + position of the polarity switch. With nitrogen as the carrier, several gases, e.g. hydrogen and methane, require setting in the — position.
- (6) Carrier gas flow. This control, on the left side of the front, is a pressure regulating valve and a capillary orifice. The pressure is indicated on the gauge just above the control.
- (7) Sample inlet. The sample inlet on the lower right top is capped by a standard, self-sealing rubber serum cap retained in place by a metal cover. The sample is injected by piercing the cap with the needle of a hypodermic syringe inserted through a hole in the cover, and emptying the syringe.
- (8) Gas Sampling Valve. The gas sampling valve, found on the lower right front of the instrument, permits placing a gas filled loop into the valve system. The inlet to this gas sampling valve is just to the right of it. This loop can be above or below atmospheric pressure. The pressure at which the sample is introduced is dependent on the temperature at which the column is operated and the vapor pressure of the least volatile component at that temperature.

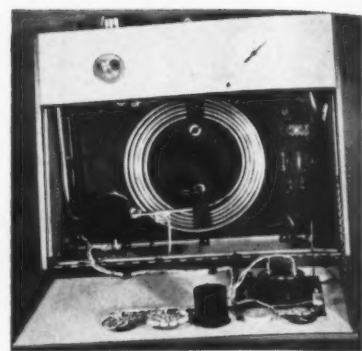


Figure 2. Gas chromatograph with top open.

The time required for the various components of a sample to pass through the chromatographic column to the detector cell, and the degree of resolution as indicated by the trace on the strip chart, vary with several factors:

- (1) nature of the sample;
- (2) partitioning agent and the support material in the column;
- (3) length of the column;
- (4) flow rate through the column;
- (5) operating temperature of instrument.

Figure 2 is a photograph with the top open. A twelve-foot column coiled up is shown in place over the heater. Temperature inside the instrument is maintained at 40° C.

Figure 3 is a flow diagram of the instrument. All components are shown in their relative positions.

Figure 4 shows how the gas chromatograph works. When in operation, the gas chromatographic column becomes a two-phase system — a static phase and a moving phase. The static phase is either a solid (gas adsorption chromatograph) or a solid coated with a high

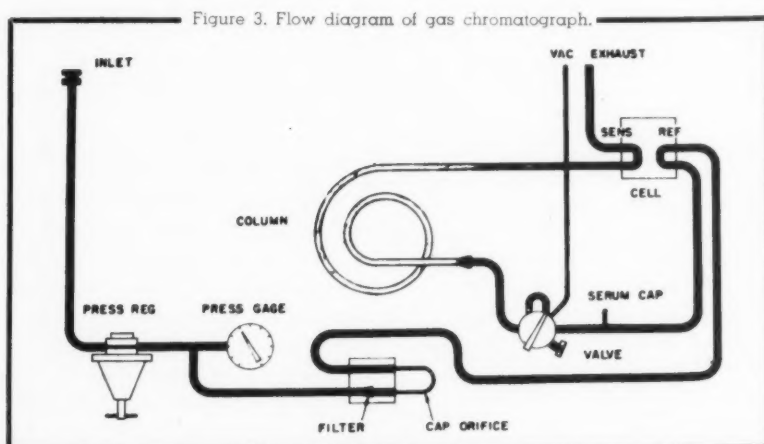


Figure 3. Flow diagram of gas chromatograph.

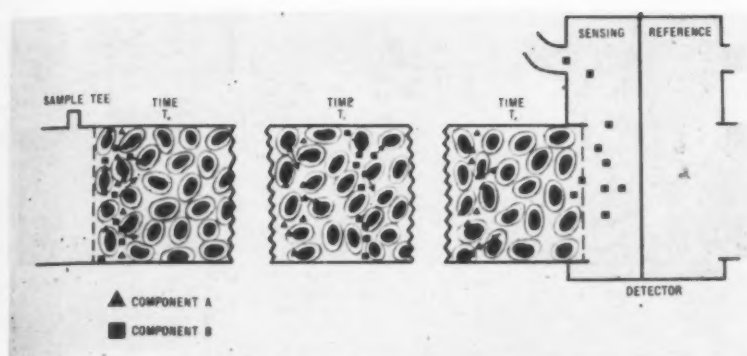


Figure 4. How gas chromatograph operates.

boiling organic liquid (gas-liquid partition chromatography). The moving phase is the carrier gas which is passed through the column continuously. When the sample is swept through the column, the individual components are partitioned between the solid phases and the gas phase. In favorable cases, each component is partitioned at a different ratio between the two phases. Let V_s represent the volume of the components in the solid phase, and V_g represent the volume of the components in the gas phase. Then, if a sample contains components A and B and the ratios $\frac{V_{sA}}{V_{gA}}$ $\frac{V_{sB}}{V_{gB}}$ are different, the components will be separated as they are moved through the column. If $\frac{V_{sA}}{V_{gA}}$ is smaller than $\frac{V_{sB}}{V_{gB}}$, component B will be eluted from the column first. This is illustrated in Figure 4. The column has been divided into three sections corresponding to times T_0 , T_1 and T_2 . Initially, when the sample is injected at time T_0 , the components are not separated in the column, but they are partitioned at different ratios between the two phases. The sections of the column corresponding to times T_1 and T_2 then illustrate how the components are separated as they move through the column.

Table No. 1
Thermal Conductivities
of Carrier Gases at 0°C.

	k^*
Hydrogen	15.9
Helium	13.9
Nitrogen	2.28

* k = kilo-erg $\text{cm}^{-2} \text{sec}^{-1} (\text{°C. cm}^{-1})^{-1}$

Figure No. 14

The thermal conductivity cell is the most widely used detector in gas chromatography. This cell consists of a hot wire filament held in the center of a small tube or metal block through which the gas passes. The filament is heated with electric current and the temperature rises to some constant value which depends on the current applied, the resistance of the filament, the temperature of the cell block, the nature of the gas, and to some extent on the flow rate of the gas. The change in resistance of a heated wire due to the heat lost from the wire through the surrounding atmosphere of the test gas is measured by means of a Wheatstone Bridge. A reference cell with the carrier gas passing through is balanced against a sensing cell containing the carrier gas and sample. The cells are balanced with only carrier gas passing through both cells, and when the sample is injected, an unbalance is caused which is measured by a recorder shown in Figure 5. The unbalance is directly in proportion to the difference in thermal conductivity of the carrier gas and the sample components. Thermal conductivities of commonly used carrier gases are shown in Table I. Although hydrogen has the highest thermal conductivity, because of its explosive quality it is not as commonly used as helium. Nitrogen can also be used but, because of its lower thermal conductivity, would not give as high a sensitivity as helium. Most of the vapors and gases which would be analyzed would have from 1/6 to 1/10 the thermal conductivity of the helium.



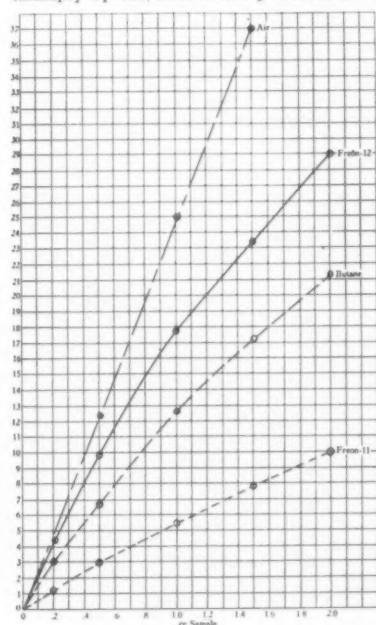
Figure 5. Recorder.

Quantitative Measurements

THE quantity of vapor is directly related to the area under the peak. The area can be measured by means of a planimeter, by cutting out the peak shape on suitable paper and weighing, or for routine analysis, by coupling an automatic integrator to the detector output. Peak areas may also be measured by multiplying peak heights by half the base width. It is also possible to calibrate a known sample weight against peak heights. Measurement of peak height affords a very simple and rapid method of quantitative analysis.

Because with the liquified gases it is difficult to introduce an

Figure 7. Calibration curves. Peak heights (multiply by 100) shown along vertical axis.



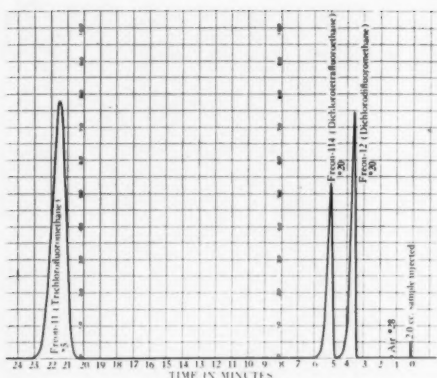


Figure 8. Chromatogram of 2.0 cc. vaporized liquid sample of "Freons" 12, 114 and 11. Analysis made in 12 ft. Di-n-butylmaleate column; regulator pressure: 32#; carrier gas: helium; flow rate: 65 cc/min.; current: 250 milliamperes; chart speed: 0.5 in./min.; temperature 40°C.; sensitivity as noted.
Figure 9 (right). Chromatogram of 2.0 cc. of propane-"Freon" 12 mixture under same conditions as shown for Figure 8.

exactly determined liquid sample, internal standardization techniques are most practical. In the internal standard method, suitable volatile substances are made up in known proportions and peak areas (or heights) are referred to the peak area of the standard. Figure 7 shows such an internal standardization.

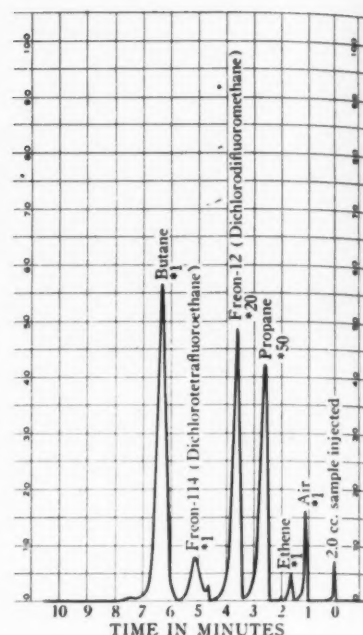
In the internal normalization technique, the area of all the peaks present is added to give a total area which is normalized to 100 per cent. The ratios of individual areas to this total give percentage concentrations directly.

Figure 8 is a chromatogram of 2.0 cc. vaporized liquid sample of "Freons" 12, 114 and 11. This illustration shows that these "Freons" are completely resolved on the 12-foot di-n-butyl maleate column. The elution time of "Freon" 11 is somewhat prolonged, and if

only these three components were present, it might be worthwhile to shorten the column to reduce the analysis time. The analysis time could be reduced to about 15 minutes if an eight-foot column were being used. This column should still provide adequate resolution between "Freon" 12 and "Freon" 114. The following analysis taken from the chromatogram shows the presence of a trace of air.

	Volume %	Weight %
Air	0.12	0.025
Freon 12	39.9	34.50
Freon 114	26.6	32.60
Freon 11	33.5	32.90

Figure 9 is a chromatogram of a 2.0 cc. vaporized liquid sample of propane and "Freon" 12 solution. This chromatogram shows complete resolution between propane and "Freon" 12. It also shows that traces of air, ethane, "Freon" 114 and butane were detected by using



maximum sensitivity. These liquefied gases were present in the cooling coils through which the samples were taken, and the degree of contamination was unsuspected until the chromatograms were run.

	Volume %	Weight %
Air	0.33	0.15
Ethane	0.13	0.06
Propane	72.4	50.00
Freon 12	25.0	47.75
Freon 114	0.20	0.54
Butane	1.89	1.73
	99.95	100.23

Figure 10 is a chromatogram of a 2.0 cc. vaporized liquid sample
(Turn to Page 109)

Figure 10. Chromatogram of 2.0 cc mixture of a butane and "Freon" 114 mixture under same conditions as shown in Figure 8.

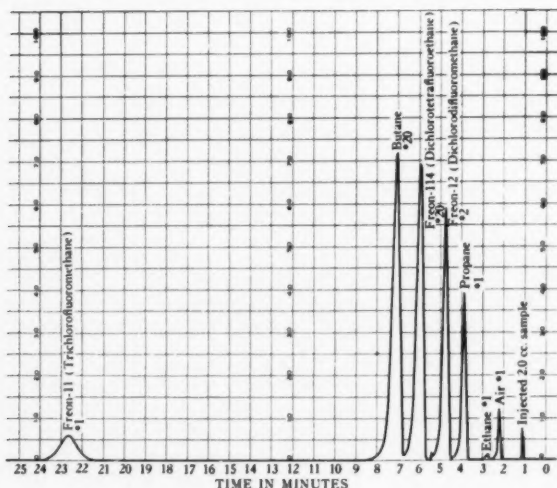
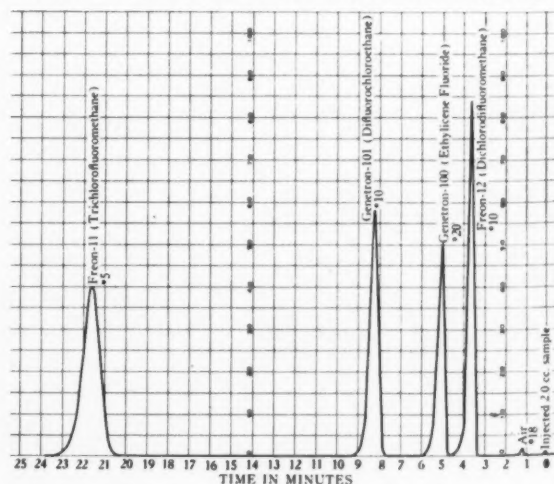


Figure 11. Chromatogram of 2.0 cc "Freon" 12, "Genetron" 100, "Genetron" 101 and "Freon" 11 mixture. Conditions same as Fig. 8.





Calspray's present plant in Richmond, Calif., is about 30 times the size of the original Watsonville plant. Other Calspray manufactur-

ing units are located in South Plainfield, N. J., East St. Louis, Mo., and Orlando, Fla. Foreign plants are in Mexico, Canada, France.

Calspray, at 50, Looks Ahead

FIFTY years ago this month a patent was filed for a new method of making lead arsenate and a new product, basic lead arsenate. These two inventions made possible the first practical, inexpensive and effective control of the then devastating codling moth.

These two patents might be looked upon as the birth certificate of California Spray-Chemical Corporation, for it was on the basis of this invention, and others closely related, that the company found its roots.

The young company's assets, back in 1907, were limited to the genius of two men—W. H. Volck,

an entomologist, and E. E. Luther, a chemist. There was a small laboratory in Watsonville, Calif., and a small group of men in the community who backed their faith in Volck and Luther with an investment of a few thousand dollars in the new company.

Today, California Spray-Chemical Corporation is the world's largest company specializing in formulation and sale of garden spray and agricultural chemicals. Some 600 products have followed the original lead arsenate, many of which have been Calspray's inventions. In place of the Watsonville laboratory, there is a 40-acre plant

in Richmond, Calif., another in St. Louis, Mo., a third in South Plainfield, N. J., and a fourth in Orlando, Fla. There are over 46 Calspray dust mills and liquid formulating plants in the United States, Puerto Rico and Canada, and 82 branch and district offices here and abroad. Calspray products are distributed around the world.

Calspray's home and garden line, which had its beginnings in 1926 with the packaging of a few of the Volck sprays in garden sizes, is now a multi-million dollar business. An analysis of this small package line made by Earl W. Cannon, vice-president in charge of sales,

P. S. Williams, Calspray's chief engineer has been with firm since 1940.



Earl W. Cannon, vice-president and manager of marketing, a 28 year man.



Leo R. Gardner, manager of research and development, joined firm in 1926.



reveals that a world-wide business selling garden and agricultural chemicals requires an enormous marketing organization — in Calspray's case, many thousands of dealers and distributors. What is necessary to attract and market through such a large number of dealers?

Mr. Cannon points out first that "marketing and sales" is only one part of the team that has "attracted and held" this big distributor dealer organization. Key members of the team are research, engineering, advertising and sales promotion. In discussing them in that order, he points out:

Research began under Mr. Volck and is now under the direction of L. R. Gardner. Volck oil sprays were the first garden products which, incidentally, are still in popular use as summer and dormant period sprays to control scale insects. Calspray has many garden product inventions to its credit. The company is credited with the development of present high standards of quality of the modern phytotoxic oils and for the pioneer work that has resulted in the modern line of insoluble copper fungicides.

Calspray Firsts

TO mention a few other important "firsts"—in cooperation with Hooker Electrochemical Co., Calspray developed lindane, one of the first successors to DDT in the new field of synthetic organic chemicals. Lindane, which is less toxic to humans and warm blooded animals than DDT, has found wide application both as a garden insecticide ("Isotox" Garden Spray M), in combination with other insecticides and fungicides as all purpose pesticides ("Botano de Luxe" Garden Dust, "Ortho" Rose Dust, "Ortho" Home Orchard Spray) and a residual spray to control livestock and dairy pests.

Another important Calspray development was "Vaportone XX" Spray, one of the highly potent phosphorus-containing insecticides. TEPP kills immediately and de-



Louis F. Czufin, advertising and sales promotion manager.

composes rapidly, making it suitable for use close to harvest time without concern for residue. TEPP was also formulated for use as a fly bait, one of the first of the quick-kill fly baits that became so popular for use in dairies and the like.

Most recent Calspray development in the fungicidal captan ("Orthocide") which has been likened to DDT in its versatility. It gives excellent control of the major diseases affecting fruit, vegetables and flowers and is coming into popular use as a seed and soil furrow treater.

In addition to the products developed by the company, research must be abreast of important new chemicals developed elsewhere for formulation into "Ortho" products.

To summarize, a creative research department assures the dealer of the opportunity to be "first"

with new and improved products.

Engineering, under the direction of P. S. Williams, is equally as important as research in the development of new products. Efficient methods must be found to insure the uniform high quality of products at an economic price.

Hundreds of products have been manufactured under the "Ortho" trade mark since the inauguration of the garden and home line. The important point here is that pesticide manufacture is never static. Changes and improvements are constantly being made because pest problems are constantly changing.

Calspray's garden and home catalog includes some 35 products under the headings fertilizers, rodenticides (baits and aerosols), insecticides (multi-purpose dusts and wettable powders for garden and home insect pests), fungicides (sprays and dusts) and weed killers. These 35 products do battle with every known garden and household pest; the ingredients used represent the most efficient of their kind available today.

To summarize, the engineering department, with research, assures the dealer that the "Ortho" line gives him as complete a line of top-quality products as it would be possible for him to obtain from any one source.

Advertising and sales promotion, is under the direction of Louis F. Czufin. Budget and staff

Typical "Ortho" household garden products display at present time would include some 35 products for controlling every type of garden and household insect pest.



in this division have quadrupled in the last eight years and those increases correlate closely with sales increases. They list their activities in relation to the dealer under four classifications:

1. Point-of-sale aids. Under this classification is store display and the direct advertising help offered to the dealer. According to Jim Egger, "Ortho" dealer in Mill Valley, Calif., "There is definite advantage in handling the pesticide products of a company that offers a complete line . . . it simplifies the selling of garden chemicals. When that complete line is attractively packaged, you have a self-selling display unit. Every "Ortho" product is packaged in the bright yellow, red and dark blue that have come to be known as "Ortho" colors. A massing of these products makes a brilliant, eye-catching display.

"Ortho" labels give clear and concise directions that simplify selling and insure repeat sales.

"In addition, Calspray supplies dealers with an ever-changing number of display aids—colorful posters, easily-assembled animated displays, plaster stands, room dividers, etc., which offer the customers interesting 'do-it-yourself' ideas, as well as serving as attractive back-grounds for merchandise display.

"Calspray has adopted and marketed garden hose spray appli-

A new era in decorative dealer aids was sparked by L. F. Czufin, Calspray advertising manager, when he hired artist Mark Von Arenberg to paint the "Ortho Garden Girl" in 1948 for beautiful and colorful posters to glamorize household garden wares.



cators that have unquestionably sparked sales by making the application of garden sprays much simpler. They now offer several sizes and types of applicators to suit almost every purpose."

Calspray supplies dealers with advertising mats for their own local use. Other sales aids include the "Ortho" Garden Book, a 36 page how-to-do-it book of gardening information compiled by authorities in the field.

In addition to this "stock" material, advertising and sales promotion makes available special premium offers that attract customers . . . the garden smock designed for Calspray by famed Claire

McCardell was widely publicized through garden clubs and garden editors and broadcasters. The current "Ortho" Polka Zinnia, the Polka Pinafore and Kite displays are examples of imaginative merchandising tie-ins.

2. Advertising program. Under this category is the support that benefits the dealers through the well over a million dollar fund for advertising in national magazines, newspapers, radio and TV. In addition there is an "information service" that prepares articles about "Ortho" products for editorial use. This includes a regular service to newspaper garden editors and to all radio and TV stations broadcasting garden news. Special feature stories prepared by this service have appeared in most of the country's periodicals—including *The Reader's Digest*.

3. Educational program. "Ortho" full color movies—"Orchids of Hawaii," "How to Grow Beautiful Roses," "How to Grow Beautiful African Violets and Gloxinias," "How to Grow Beautiful Azaleas and Camellias," "European Gardens," etc., are in constant demand for showings at garden club meetings, schools and other "consumer" groups. These activities have given dealers immediate sales response.

4. Special services . . . incen-
(Turn to Page 111)

This oven for burning lead to make litharge was literally a part of the early start of California Spray-Chemical Corp. Litharge was used to make lead arsenate in a patent granted to Calspray's founders, W. H. Volck and E. E. Luther. Based on this invention the company was formed in 1907. The oven was part of Calspray's original plant in Watsonville, Calif.





New "Lysol" packaging in 12, five and two fluid ounce sizes retains certain "family" resemblances to former package through use of same trade mark, red and yellow colors. Armstrong Cork

bottle is oval shape with "hour-glass" design to fit palm. Labels supplied by National Label Co., cartons by Lord Baltimore Press, Inc., and caps by Standard Cap & Molding Co.

Lysol Disinfectant's New Look

MORE than a half-century ago, a young wholesale drug company introduced the first successful commercial disinfectant to the United States, opening the way for what has become today a \$155 million-a-year industry.

This month, that same firm—Lehn & Fink Products Corpora-

Dr. Edward Plaut,
President



tion—takes another bold step forward, one that could have effects on the chemical specialty field possibly as far-reaching as the introduction of this disinfectant over fifty years ago.

And although the primary change that meets the eye is the all new packaging of "Lysol" brand disinfectant, the difference goes much deeper, reflecting many of the recent developments in retail selling generally, and establishing new trends.

Among these developments, the most important has been that of self-service and, along with it, the necessity for a package to be its own salesman. With virtual automation in the super-markets and the increasing number of serve-yourself drug stores, the package, not a salesperson, counter card, or other outside aid must attract the eye, hold the attention, and make the sale. In keeping with this trend, "Lysol" has emerged from behind

the counter of the old-fashioned corner apothecary and into the broad fluorescent daylight of the modern self-service, open-shelf pharmacy, and self-service grocery store and super market.

"Lysol," the world's largest selling disinfectant, has helped set the pace for this change in merchandising technique by gradually

Dr. E. G. Klarmann,
Vice-president



New package, new formulation and novel promotion give world's largest selling disinfectant (and an old family friend) a new lease on its retailing life.

changing its marketing philosophy from a staid medical approach to a lighter, more popular concept. This development was not an overnight accomplishment. Actually it started when Edward Plaut, president of Lehn & Fink, first advertised "Lysol" in popular magazines some 35 years ago. A major step was "Lysol's" new formula in 1952. No longer toxic, and lighter in aroma, new "Lysol" anticipated the new "light" touch that since has affected such widely diverse commodities as automobiles, clothing and furniture.

Versatile Advertising

ANOTHER advance was made this past autumn, with the announcement of "Lysol's" advertising campaign, the most versatile in the history of the product. Seen over two network television programs, in numerous consumer magazines, and in cooperative newspaper campaigns, "Lysol" sales messages now depart from foreboding copy and use humorous cartoons in the magazines that point up the need for household "deep-cleaning."

Pace-setter for the world's disinfectant producers, Lehn & Fink now announces its campaign to make "disinfection" as common a household word — and routine — as "cleaning."

Disinfection as we know it today was but little known and practiced even less before Lehn & Fink introduced "Lysol" to the United States in the 1890's. That the company pioneered in this field can be attributed, in part, to its philosophy that might be summarized in these words: "If an individual is as young as he feels, a company is as young and vigorous as it acts." According to this method of calculation, Lehn & Fink, founded eighty-two years ago, is

indeed a young, vigorous company, alert today to the evolution of American industry and as flexible in its attitude toward marketing concepts as it was that day in 1874 when it was founded by two ambitious immigrants living the American dream.

Lehn & Fink grew from a wholesale drug partnership that served exactly nine customers in its first day of business to today's world-wide complex of plants, offices, and distributorships employ-

ing thousands and producing and marketing some 500 different products in 28 nations. This growth bears tangible testimony to the continuing vigor and youthful outlook of one of the oldest firms of its type in the United States.

Perhaps nowhere are these characteristics better exemplified than in the saga of the disinfectant that established the company as a pioneer and leader in the field of chemical specialties. And Lehn & Fink's development of "Lysol" brand disinfectant in many ways typifies its activities in relation to every product that comes out of its plants around the world.

"Lysol" was the world's first successful commercial disinfectant; its discovery a chapter out of the (Turn to Page 87)

Typical of Lehn & Fink's new advertising approach is this humorous cartoon type which appeared as a full page in the February, 1957 issue of Ladies Home Journal.

How NOT to let the flu flit through the house

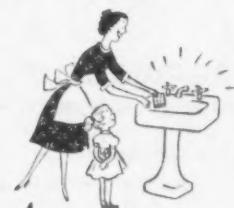


1. You could isolate the sufferer (not a bad idea!)

2. But what happens when he sneezes germs all over the house?



3. Use "Lysol" brand disinfectant on floors and walls (protective action lasts 7 full days.)



4. Basins, tubs (and dishes, of course!)



5. For when he's feeling better, why should everyone else be feeling worse?

Lysol
BRAND DISINFECTANT

kills every disease germ it touches



Gets rid of mess, muss, sick-room smells. Nothing else is as good! But why wait for sickness? Add "Lysol" regularly to cleaning suds. Helps guard your family's health. In flu weather, it's a find.



Also available in Canada

... about chemical specialties



by Milton A. Lesser

MODERN CHEMICAL SPECIALTIES

SANITARY CHEMICALS



by Leonard Schwarcz

THIS 514 page book covers the formulation, manufacture, and use of polishes, cleansers, detergents, floor-care and leather-care products, textile products, and industrial, household and allied chemical specialties. Each of the 42 chapters covers a different specialty and includes raw material listings, manufacturing methods and formulas for that specialty. The manufacturer, marketer, chemist and production man will find this book indispensable for reference work when dealing with chemical specialties.

A COMPLETELY revised 576 page book covering formulations, properties, testing, history and effective use of sanitary chemicals. Included in the book are chapters on bacteria and disease, principles of disinfection, disinfectants, deodorants, man versus insects, household and industrial insecticides, rodenticides, floor waxes and floor care, sweeping compounds, potash soaps, detergents and cleansers labeling and packaging laws and regulations. Full coverage of labeling with specimens are provided. This book is for every executive, salesman, plant man and chemist . . . written in plain understandable language.

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Add 3% sales tax if in New York City

MAC NAIR-DORLAND CO.

254 West 31st St., New York 1, N. Y.

Enclosed is our check for \$. Please send the following book(s):

. Sanitary Chemicals, Price \$8.00 in U.S.A.; \$8.50 elsewhere

. Modern Chemical Specialties, Price \$7.25 in U.S.A.; \$7.75 elsewhere.

Company

Address

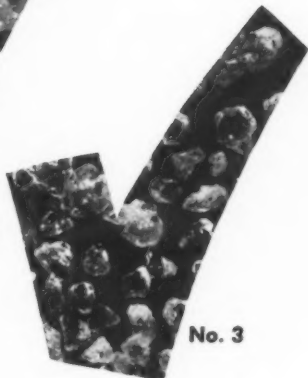
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By

CHECK SOLVAY



No. 1



No. 3



No. 6



No. 9

*Four grades to meet every need.
Actual sizes shown.*

FOR THE FINEST* IN

* Unsurpassed in quality . . . purity . . .
color . . . appearance

* Uniform granulation

* Free-flowing crystals

* Perfect for repackers . . . compounders
. . . blockmakers

PARA-DICHLOROBENZENE



*We invite you
to test this
superior para-
dichlorobenzene!*

Aluminum Chloride • Vinyl Chloride • Caustic Soda • Potassium Carbonate
Calcium Chloride • Chlorine • Sodium Nitrite • Snowflake® Crystals
Chloroform • Sodium Bicarbonate • Methyl Chloride • Soda Ash • Caustic Potash
Hydrogen Peroxide • Ammonium Chloride • Methylene Chloride • Monochloro-
benzene • Ortho-dichlorobenzene • Para-dichlorobenzene • Ammonium
Bicarbonate • Cleaning Compounds • Carbon Tetrachloride



SOLVAY PROCESS DIVISION

ALLIED CHEMICAL & DYE CORPORATION
61 Broadway, New York 6, N. Y.

Please send me, without cost, sample or samples of Solvay
Para-dichlorobenzene in these granulations:

☐ No. 1 ☐ No. 3 ☐ No. 6 ☐ No. 9

Name _____

Position _____

Company _____

Address _____

City _____ Zone _____ State _____ DM-3



RECOGNIZE HER NOSE

The importance of Mrs. Buyer's nose can't be underestimated in considering the selling factors involved in the successful merchandising of your product.

- Her nose influences the first purchase in the store.
- Her nose influences product judgment through use.
- Her nose influences brand loyalty.
- Her nose influences repeat purchases.

... give your product a forceful selling factor through the use of knowingly effective odor treatment.

VAN AMERINGEN - HAEBLER, INC.
521 WEST 57th STREET, NEW YORK 19, N. Y.

history of medicine. The identification of two cases of cholera in two neighboring German towns in 1889 led to an examination of the various disinfectants then in use, with a view toward halting the spread of the dread disease. The diagnosis of the cases as cholera was made in the bacteriological research laboratory of a Dr. Conrad Schmitt, of Wiesbaden. It was in Dr. Schmitt's "Laboratorium" that the disinfectants then available, mainly crude carbolic acid fractions, were found greatly limited in their germicidal efficacy. This was due primarily to their inability to mix with water, but also resulted from their tendency to injure body tissue.

At about that time, an English tar-oil disinfectant was originated. It was superior to carbolic acid disinfectants in that it permitted emulsification with water. However, it still retained some of the drawbacks of the carbolic acid preparations.

Dr. Schmitt knew of this product and of its shortcomings. But he felt that it represented a step in the right direction. He assigned a young chemist who had recently joined his laboratory to develop a disinfectant that would constitute an improvement in regard to effectiveness and acceptability. After numerous experiments, Dr. Gustaf Adolph Raupenstrauch, Dr. Schmitt's young chemist, discovered a process of rendering tar acids soluble in water by combining them with certain soaps, in proper proportions. The new preparation that resulted from this process was vastly superior to any then known disinfectant because of its higher germicidal efficacy, its improved odor and its complete solubility in water. Dr. Raupenstrauch called it "Lysol."

Soon thereafter, the firm of Schülke and Mayr in Hamburg obtained manufacturing rights to "Lysol" and distributed samples to physicians, surgeons, and hospitals. In the summer of 1890, the new disinfectant was first offered to the

public during the Medical Congress of Berlin.

While these developments were taking place, F. W. Fink, one of the original partners of Lehn & Fink, was visiting Europe in his periodic search for new products that he could introduce in the

A departure from foreboding copy for "Lysol" disinfectant is exemplified in three typical fractional page magazine advertisements shown below.



"There's a little Lysol girl, and you'll never smell a sweeter girl!"

Lysol doesn't just mask odors, it completely destroys by killing their source—odor-causing bacteria! Deep-cleans cracks and crevices—really disinfects! Protective action lasts 7 full days—168 times longer than bleach! Lysol brand disinfectant goes after dirt, grime, leaves everything with a just-cleaned smell! Nothing else is so good! Use it regularly!

Let **Lysol** do the dirty work

Also available in Canada



"But they're sure a little of trouble—not with Lysol to deep-clean for me!"

Whenever there's mess and mess, add "Lysol" to your odds, and save scrubbing! "Lysol" deep-cleans, disinfects, disinfects. Protective action lasts 7 full days—168 times longer than bleach! "Lysol" brand disinfectant goes after dirt, grime, leaves everything with a just-cleaned smell! Nothing else is so good! Use it regularly!

Let **Lysol** do the dirty work

Also available in Canada



"Have yourselves a good time, fellows—today's my day to deep-clean with 'Lysol'!"

The lady knows: the magic "Lysol" adds to any cleaning woman. With no extra work, it gets rid of mess, mess, odor... (the dirt you see and can't see! They clean! Disinfect! Deep-clean! Protective action lasts 7 full days—168 times longer than bleach! Use "Lysol" brand disinfectant regularly!

Let **Lysol** do the dirty work

Also available in Canada

United States. He heard about the new "Lysol" disinfectant, and brought back a few bottles with him.

This in itself was not unusual for a company which already had made a reputation in the trade by importing from all parts of the world key products the American market had never seen before. Phenacetin, antipyrine, pilocarpine, vanillin, coumarin, and many other foreign preparations were introduced in this country by Lehn & Fink before the turn of the century. What was to become the firm's most spectacular import was made in 1884, when shipment of diphtheria antitoxin, recently developed in Europe, arrived in New York and was distributed free by the company just in time to quell an outbreak of diphtheria.

U. S. Introduction

KEEPING pace with the innovations in the rapidly expanding drug field, Lehn & Fink obtained the United States sales agency for "Lysol" in 1897. Initially, the product was imported from Germany in 100 gram and 500 gram bottles, then in barrels for repackaging in the U. S.

There was no "Liquor Cresolis Compositus" in the *U. S. Pharmacopoeia* when Lehn & Fink brought this revolutionary germicide to the attention of the American medical profession. Sterilization procedures in the hospitals were still in the horse-and-buggy stage, so doctors welcomed a product which had been made under rigid control, was clearly soluble in water, maintained a constant germicidal strength and showed a neutral reaction.

"Lysol" was first introduced to physicians in New York State, Washington, D. C., Delaware, and in parts of Pennsylvania. Eventually, it went on sale to the general public in drug stores and, by the time of the Spanish American War, the disinfectant was well on its way to national distribution.

In 1912, Lehn & Fink undertook the manufacture of "Lysol" in



NEW LIVESTOCK-BARN SPRAY BOOKLET

This informative 12-page booklet summarizes the properties of LETHANE 384 insecticide and outlines step-by-step how livestock and barn sprays containing LETHANE combine superior knockdown, killing power, and economy with good repellency, safety, and stability. In addition, you'll find extensive test data comparing LETHANE sprays with others. These comparisons show, for example, that with equal concentrations of finished sprays LETHANE knocks down as many flies in 2 minutes as other agents do in 6 minutes. What's more, even when used at half the dosage of other formulations, LETHANE sprays still prove superior. Yet the cost of LETHANE is substantially less than that of other agents. Send the coupon today for your copy of this valuable booklet!

Read how **LETHANE K.O.'s** flies
up to 3 times faster... at half the cost!

SEND FOR HOUSEHOLD SPRAY BOOKLET

In 16 easy-to-read pages, this booklet gives complete information about LETHANE 384 and LETHANE 384 SPECIAL insecticides for outstanding liquid household sprays. Safety, knockdown, killing power, clean odor, stability, properties, and specimen labels—all these are covered.

You'll also find Peet-Grady test data for LETHANE sprays and other commonly used sprays. Here you'll see evidence that LETHANE provides substantially better knockdown, and at less cost than other toxic agents! Check the coupon and mail it today.



ROHM & HAAS COMPANY
Dept. 5
Washington Square, Philadelphia 5, Pa.

I'm interested in formulating fly and other insect sprays with faster knockdown and lower toxic agent cost. Please send:
☐ Livestock-Barn Spray Booklet ☐ Household Spray Booklet

NAME _____ TITLE _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____



Chemicals for Industry

**ROHM & HAAS
COMPANY**

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Representatives in principal foreign countries

LETHANE is a trade-mark, Reg. U.S. Pat. Off.
and in principal foreign countries.

this country and, after the first World War, bought the Schülke and Mayr concern and its worldwide rights to the production and distribution of "Lysol." The company now had complete control of the product, from its closely-guarded formula to its point-of-purchase merchandising. And young Edward Plaut, soon to become Lehn & Fink's president, made the most of this opportunity.

Holder of a doctorate in chemistry himself, Mr. Plaut established a research laboratory at the company's new modern plant in Bloomfield, N. J. Despite "Lysol's" leadership in the disinfectant field at that time, the young executive realized that good as "Lysol" was—and it was the best then available—it could be made still more effective against disease bacteria. Another task that faced the laboratory, which came under the supervision of a young Dr. Emil G. Klarmann at about that time, was the standardization of raw materials used in "Lysol."

And, while the laboratory was preparing to improve the product, Edward Plaut, then vice-president and advertising manager of the firm, had taken charge of the promotion of "Lysol." It was a deft and dramatic bit of business.

Until young Plaut joined the firm, "Lysol" had been promoted only through medical journal advertisements aimed almost exclusively for use in hospitals.

Advertised for Housewives

CONVINCED that doctors had been thoroughly sold on "Lysol" as a germ killer, Mr. Plaut envisioned thorough cleanliness and freedom from disease germs as going beyond the walls of the hospital. As there were far more persons ill at home than in hospitals, he reasoned, why could not the sickroom at home receive the same attention as the operating room? With this thinking, he embarked on a broad program of education, via advertising and publicity, to acquaint the American housewife with the germ theory of disease. Eventually, of

course, this campaign went beyond the sickroom—if disinfection could rid the sickroom of germs, it also could destroy these same germs before they brought disease or illness to a household.

Disinfection of the entire home—as a preventive measure—became the object of the campaign. Newspapers, popular national magazines, and, later, radio carried the message of protecting the family's health through disinfection, to the American housewife. Within a short time, the program took effect and, as the incidence rates of diseases gradually declined in these years, the medical profession gave more than passing credit to the growing practice of universal disinfection, so vigorously championed by Lehn & Fink.

About this time, "Lysol's" effectiveness as a feminine hygiene aid was discovered and given an important share of promotional support.

Laboratory Developments

IN the laboratory, work continued apace. Having completed its first assignment, that of standardizing the raw materials used in "Lysol" production, Dr. Klarmann—today vice-president and manager of technical services at Lehn & Fink and last year's president of the Chemical Specialties Manufacturers Association—set in motion the long series of experiments that eventually would lead to a true broad-spectrum germicide combining bactericidal potency with safety in use. Originally, this consisted of selecting special fractions of cresylic acid and of various emulsifying agents, with tests of each combination against a wide variety of bacteria under both laboratory and simulated use conditions. By 1929, this work resulted in more than doubling the germicidal potency of "Lysol"; it now took less than half the amount of "Lysol" in dilution to kill the same number of germs.

As a by-product of these experiments, the world of science became a beneficiary of the work of Dr. Klarmann and his colleagues at

the Lehn & Fink laboratory. Numerous scholarly papers were presented at meetings of chemical, bacteriological and other scientific societies, and subsequently published in technical journals.

In the most recent recognition of his contributions to man's war against germs, Dr. Klarmann last year was awarded the honorary degree of Doctor of Science by the Philadelphia College of Pharmacy & Science.

The next step would prove still more challenging: erasing forever the ominous "skull-and-cross-bones" from the "Lysol" bottle. Lehn & Fink's researchers had prepared and tested many synthetic substitutes for cresylic acid. The question was, could any of these essentially non-toxic synthetics replace cresylic acid and produce a new disinfectant available economically to the public? It took more years to obtain the final answer, years of extensive tests under simulated use conditions, in test tubes, and on living animals. These tests revealed to the researchers the effectiveness of different combinations of ingredients against types of disease bacteria, under varied conditions of practical usage.

Finally, in 1952, Lehn & Fink was satisfied when its laboratory findings were corroborated by three independent research teams. The laboratory had come up with a formula which replaced all but a very small percentage of the cresylic acid with orthohydroxydiphenyl, a synthetic phenolic compound. The new formulation still retained all of "Lysol's" potency and versatility in use. This same formula also made "Lysol's" odor more pleasant, while retaining its fresh, clean aroma. And, most important, it permitted the elimination of the poison markings from the "Lysol" label, with the assent of the federal regulatory authorities in charge of supervising the interstate commerce in disinfectants.

This month, the latest chapter in the history of "Lysol" is being written as Lehn & Fink recasts
(Turn to Page 101)



ALCOGUM could be the answer...
to all of these problems.

ALCOGUM is an extremely effective emulsion or dispersion stabilizer and viscosity controller.

- Can be furnished in various viscosities and concentrations with a pH range from 5 to 12.
- Provides greater dilutability.
- Is useful in agricultural formulations as a dust sticker.
- Is an effective adhesive and film former.

The answer to many fungus control problems—Alco dithiocarbamates and thiuram disulfides.

Our wide experience in tailoring our products to fit your requirements is at your service.

Distributors for Firestone Liberian Latex



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PHILADELPHIA 34, PA. GARFIELD 5-0621

SOAP and CHEMICAL SPECIALTIES

Insecticidal Performance of Strobane Aerosols

Particle size and formulations determine insecticidal power of aerosols. Valve geometry also is a factor.

By John C. McCool*

B. F. Goodrich Co. Research Center
Brecksville, O.

PARTICLE size distribution directly affects insecticidal performance of "Strobane"*** aerosols as it has been shown to do in other pressure packaged pesticides. How to arrive at the optimum particle size distribution by selecting the right valve and formulation was the object of work carried out at the laboratories of B. F. Goodrich Chemical Co., manufacturers of "Strobane" chlorinated terpene hydrocarbon.

Insecticidal efficiency combined with low mammalian toxicity under conditions of chronic exposure suggest the use of "Strobane" in household aerosol sprays. Initial experiments made to obtain particle size data of "Strobane" aerosols and using the author's interpretation of the Yeoman(1) method did not produce meaningful data.

*** Registered trademark of B. F. Goodrich Chemical Co.

Our difficulties become apparent from performance data received with two experimental formulations where the only known variable involved the selection of dispensing valve nozzle orifices.

The data shown in Table 1 represent the insecticidal properties of the aerosols when nozzles of different external orifice size were interchanged between the two dispensers containing the same formulation. The satisfactory insecticidal performance using one nozzle, regardless of which dispenser it was used with, was taken as an indication that spray pattern must be a direct function of nozzle geometry. The data also indicate that the other nozzle caused poor insecticidal performance. It seemed logical, therefore, that a distinct difference in particle size distribution of the four combinations could be demonstrated. By our tests, no sig-

nificant differences were found.

Because of this typical failure to achieve correlation of aerosol particle size data with insecticidal performance an intensive investigation of the Yeoman method was undertaken to obtain meaningful information by its use. The balance of this paper presents the considerations given to sampling and counting procedures which served to provide satisfactory particle size data on "Strobane" aerosol performance. No claim is made that these data present the absolute or true picture of the spray distribution, since it is recognized that the collecting slide shows a bias with respect to the different size particles (2). The demonstration of relative differences in spray patterns as a function of variations in "Strobane" formulations, and of the dispensing valve design, was regarded as the important objective. With such information, a guide for attaining the maximum efficiency of insecticidal performance of "Strobane" aerosols became available.

The Yeoman method for measuring particle size distributions of aerosols consists essentially of discharging a sample of the aerosol into a wind tunnel so that the spray is carried past a whirling glass slide mounted on a rotor within the tunnel. The slide is suitably covered, and the sample is subjected to a particle size count with the aid of a microscope. The results are reported in terms of the frequency of the various particle size classifications. A correction

* Presented at the 43rd annual meeting of the Chemical Specialties Manufacturers Ass'n., Washington, D. C., Dec. 4, 1956.

Table 1. Insecticidal Performance of Experimental "Strobane" Aerosols

Formulation: 2% + knockdown agent
20/80 actives/propellant
50/50 Freon 11/Freon 12

Container	Nozzle Orifice	5'	OTA Differences (a) (b)			24 hour Mortality
			Knockdown	10'	15'	
A	0.0225"	+ 3	+11	+13	-17	
B	0.026"	+11	+26	+27	+ 6	
A	0.026"	+11	+21	+20	- 3	
B	0.0225"	+10	+22	+21	-14	

(a) By CSMA Aerosol Test Method for Flying Insects.

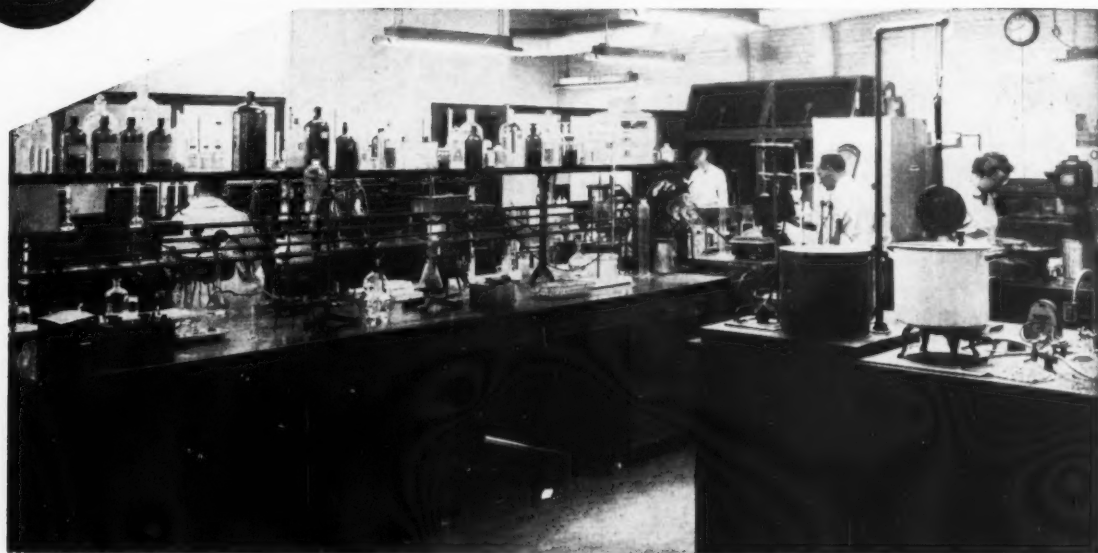
(b) Data supplied through courtesy of McLaughlin-Gormley-King Company, Minneapolis, Minnesota.

Table 2. Particle Size Distributions from Various Slide Zones

Wind	← Zone 1 →			Sample: OTA			
Direction	← Zone 2 →						
	← Zone 3 →						
	↓ Edge closest to motor						
	Cumulative % (by microns)						
Zone	10	15	20	25	30	35	MMD (μ)
1	17	52	78	90.5	96	98	14.6
2	7	41	74	90.5	97	99	16.1
3	9	37	66	84	93	97	17

Control

the **KEYNOTE** to better
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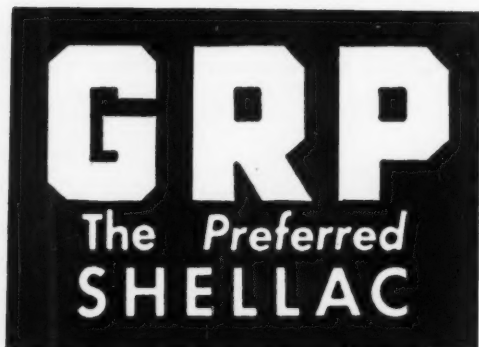


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factor must be applied to the apparent diameter classifications to compensate for the droplets flattening out as they impinge on the slide; this is obtained by the use of May's procedure (3).

From these data, a curve is constructed on logarithmic probability paper, from which the cumulative percentage by particle diameters in increments of five microns may be interpolated. The mass median diameter (MMD), or the diameter of particles in microns above or below which 50 per cent of the total mass of the spray is present, is also determined from this curve. Factors found to have a profound effect on the results by this method were: (1) the zone of the collecting slide selected for particle size count, (2) the air velocity in the wind tunnel during sampling, and (3) the speed of the rotor upon which the collecting slide was mounted.

Standardization of Tests

EVIDENCE that the zone of the slide selected for counting markedly affects the distribution found is presented in Table 2. It was also found that the count made across the width of the slide will give variations. Since consistency of results rather than the absolute or true values was our objective, the counting procedure was standardized so that the sampling was always taken from the center of the slide. This was accomplished by setting the slide at specified horizontal and vertical stage settings (after covering the slide to reduce evaporation), and traversing the center line parallel to the slide length until the required 200 or more particles had been classified by diameter and tabulated as they passed through the microscope field.

The second factor to be standardized for consistent counts was the air velocity in the tunnel during sampling. Originally, high air velocities (over 1600 cubic feet per minute) during sampling were believed necessary. However, the particles impinging at such air ve-

Table 3. Effect of Air Velocities and Rotor Speeds on Particle Size Distributions

Sample: OTA

Air Velocity (cmf)	Rotor Speed (rpm)	Cumulative % (by microns)							MMD (μ)
		10	15	20	25	30	35	40	
450	460	6.5	32	61	81	91	96	98+	17.8
450	915	2.5	26	61	84	94	98	100	18.2
1000	460	20	66	90	97	100			12.8
1000	915	21	55	78	90	95	98		14.2

locities tended to break up into smaller particles. In Table 3, the distributions for a standard OTA dispenser using two different air velocities (measured in front of the rotor) are presented. While the air velocity effect is very evident, the rotor speed seems to be of little consequence. Actually the higher rotor speed made it very difficult to collect a suitable size sample. Several attempts usually were necessary before there was a reasonable indication that the droplets had not piled on top of each other or had coalesced.

On the basis of these results, the air velocity was standardized at 450 c.l.m., and the rotor speed at 460 r.p.m. The air velocity was measured with an Almor "Velometer," and the rotor speed with a "Strobotac" (General Radio Corp.). These conditions together with the specifications of the slide area selected for counting were conducive to fairly reproducible results.

Further standardization was

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accomplished by using slides previously treated with "Dri-Film" SC-87 (General Electric). Each slide was immersed for a few seconds in the undiluted silicone, permitted to drain, and then wiped free from excess silicone. In general, the first distribution determined on such a slide gave high results, apparently, owing to a tendency to coalesce.

Table 4. Effect of "Strobane" Formulation on Insecticidal Performance

Propellant: 50/50

Freon 11/Freon 12

Type of Formulation	%Strobane	OTA Differences (a) (b)			
		5'	Knockdown 10'	15'	24 Hour Mortality
20/80	1	+1	+12	+19	-25
	2.5	-1	+2	+3	-18
	3	+2	+6	+7	-15
	5	+5	0	+1	-14
15/85	1	+2	+13	+22	+1
	2.5	+2	+16	+25	+3
	3	0	+13	+18	+4
	5	0	+11	+12	+7

(a) CSMA Aerosol Test Method for Flying Insects.

(b) Data supplied through courtesy of McLaughlin-Gormley-King Company, Minneapolis, Minnesota.

After the first sample was washed off with acetone, subsequent determinations gave fairly reproducible results. In the graphing of the data, it was also found expedient to construct the straight line so as to give major consideration to the cumulative percentage values corresponding to the range between 10 and 30 microns. This arbitrary procedure recognizes that the slide does not collect the fine (<10 mi-

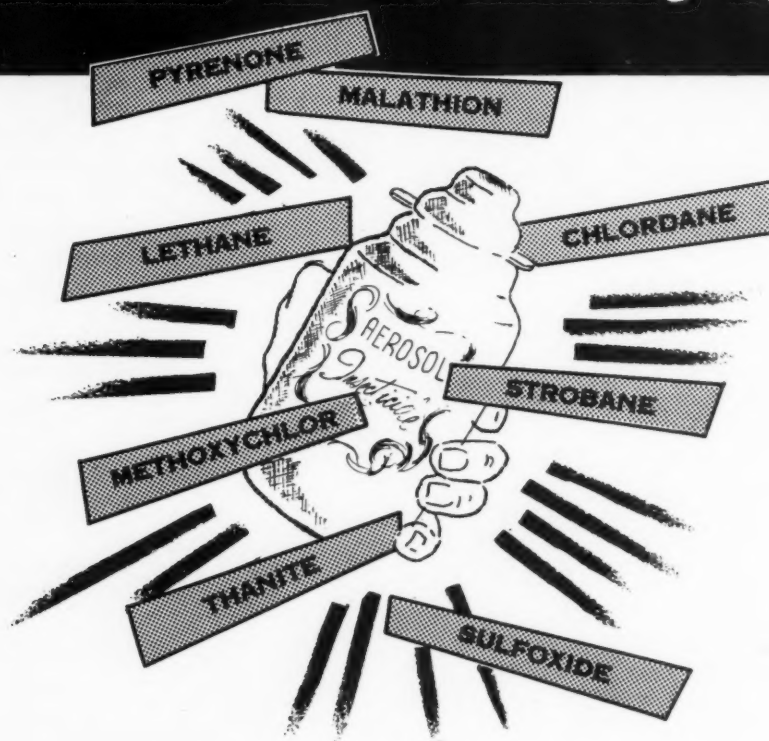
Table 5. Effect of "Strobane" Formulation on Particle Size

Propellant: 50/50

Freon 11/Freon 12

Type of Formulation	% Strobane	Cumulative % (by microns)							MMD (μ)
		10	15	20	25	30	35	40	
20/80	1	3	21	48	69	83	94		20.5
	2.5	3	21	48	70	84	91	95	20.5
	3	4	22	50	72	86	93	97	20.1
	5	3	19	45	73	83	91	96	20.9
15/85	1	6	30	58	78	89	96		18.5
	2.5	5	30	61	81	92	91	99	18.1
	3	7.5	33	60	79	89.5	95	97	17.9
	5	5	28	57	78	89	95	98	18.6

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Table 6. Effect of Propellant Composition and "Strobane" Content on Particle Size Distributions of Aerosols

Formulation: 20/80

Valve B: int. orifice 0.016"
ext. orifice 0.020"

F-11/F-12	% Strobane	Internal Pressure p.s.i.	10	Cumulative % (by microns)					MMD (μ)
				15	20	25	30	35	
50/50	2	38.5	7.5	47	78	93	99	100	15.6
	3.5	39	8	41	70	88	95	99	16.3
	5	39	10	42	75	90	96	99	15.8
45/55	2	43	18	60	86	95	100		13.8
	3.5	42	13	58	87	97	100		14
	5	49	11	44	72	88	95	100	15.9
40/60	2	46	20	62	87	97	99		13.5
	3.5	44	17	67	92	99	99+		13.1
	5	52	10	45	75	90	97	99	15.6

crons) particles with the same efficiency as those between 10 and 20 microns, as pointed out by many observers (e.g. reference 4).

Test Procedure

USING the specified conditions as outlined, the particle size distributions were determined for

"Strobane" evidently makes a relatively small contribution to increasing insecticidal performance, whereas the ratio of actives to propellant is a very important factor.

The particle size distributions of these same aerosols are presented in Table 5. Correlation of the lower particle size distribu-

solubility of the propellant in the actives solutions. A series of aerosols (20/80 formulations) was prepared with variable "Freon" 11 "Freon" 12* ratios and with variable "Strobane" contents. A different type valve system than that for the dispensers described in Table 4 and 5 was used in these experiments. The particle size distributions determined for this series are shown in Table 6. A comparison of the 20/80 formulations in Tables 5 and 6 demonstrates a change of particle size distributions as a result of the change of the valve type. As might be expected, an increase in internal pressure tended further to reduce particle size.

An anomaly that remains unexplained is the case of the five per cent "Strobane" formulation having the 40/60 "Freon" 12 ratio, where

Table 7. Viscosity of "Strobane" Concentrates

on Formulation	% Strobane	on Actives	Viscosity** of Actives Solution
2		10	96 secs
3.5		17.5	109.5 secs
5		25	127 secs
		0	76 secs

* For a 2080 formulation.

** Measured by time of flow through an Ostwald pipette at 82°F.

Table 9. Effect of Valve Orifice Dimensions on Particle Size and Insecticidal Performance of Experimental "Strobane" Aerosols

Valve D 2% Strobane, 20/80 Formulation

Internal Orifice	External Orifice	MMD μ	OTA Differences (a)			
			Knockdown 5'	10'	15'	24 Hour Mortality
0.016"	0.020"	19.5	+3	+8	+16	-18
0.0135"	0.020"	16.7	+6	+16	+19	+2

(a) CSMA Aerosol Test Method for Flying Insects

a number of "Strobane" aerosols, for the purpose of seeking a correlation of such data with insecticidal performance. In Table 4 are shown the results of the insecticidal activity (measured by the Chemical Specialties Manufacturers Ass'n. Aerosol Test Method for Flying Insects) of a series of aerosols containing variations of "Strobane" formulations. The concentration of

tion with increased insecticidal activity is excellent. The fact that the distributions within a given actives/propellant series are quite similar would explain the similarity of insecticidal action of the aerosols.

A possibility existed that an increase in "Strobane" content affects the internal pressure of an aerosol on the basis of a change of

the increased pressure did not lower the particle size distribution. The concentration of "Strobane" in the actives solution increases the viscosity of the solutions (Table 7). The increased viscosity of the five per cent "Strobane" concentrate may tend to resist the greater break-up tendency of the spray resulting from the increased pressures. This conjecture obviously requires further study because the factor of surface tension also enters the picture. In any event, the differences in particle size distribution between the 15/85 and 20/80 "Strobane" formulations do not appear to be solely a function of internal pressure change, but rather an effect of the valve used.

The question then arose as to whether the 15/85 actives/pro-

Table 8. Effect of Various Valves on Particle Size Distribution of "Strobane" Aerosols

Formulation: 2% Strobane.

20/80 actives/propellant
50/50 Freon 11/Freon 12

Valve Type	Internal Orifice	External Orifice	10	Cumulative % (by microns)					MMD (μ)
				15	20	25	30	35	
C	0.020"	0.020"	1.5	14	37	61	78	88	94
	0.015"	0.018"	6.5	32	60	80	90	95	98
D	0.016"	0.020"	5.5	27	53	73	85	92	96
	0.0135"	0.020"	8	38	68	86	94	98	99
E	0.014"	0.020"	1	14	40	61	83	91	96
	0.014"	0.016"	7.5	38	70	87	93	98	16.6
	0.018"	0.020"	4	23	47	70	88	92	96
	0.018"	0.016"	6	34	67	86	97	98	17.1

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(Turn to Page 105)

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Insect Attractants and Repellents

By V. G. Dethier*

Department of Biology
Johns Hopkins University
Baltimore 18, Md.

Part II. Attractants

TO appreciate the use to which attractants can be put and the direction toward which future research may most profitably be directed, it is imperative to understand what an attractant is and its mode of action.

An attractant by definition is something which causes an insect to perform *directive* locomotory responses toward the source of stimulation (Dethier, 1947). This definition implies that the material in question acts at some distance from its source in the same general sense that light and sound do. Under these conditions the kinds of stimuli which can act as attractants are limited. In the realm of chemicals only those compounds can be attractants which can set up concentration gradients in nature or are more actively and unevenly disbursed from their source by some flowing system such as air or water.

Since an attractant releases a locomotory response, it must be a stimulus which is not a goal in itself. In the language of etiologists, it would release appetitive behavior. A simple illustrative example can be seen in the behavior of the fruitfly toward the odor of fruit. When the fly perceives the odor, a characteristic behavior is released; the fly follows the odor to its source. This is the appetitive phase. When the fruit, the source of odor is found, a feeding reaction is released. Feeding is the

consummatory act. Thus, most attractants are compounds which lead an insect to a goal. The goal may be food, mate, or egg-laying site. By the very nature of things, an attractant is an odor as far as terrestrial organisms are concerned. But not all acceptable odors are attractants. A given odor may induce an insect to feed or mate; it is not an attractant.

The mistake is often made by applying the term attractant to any compound around which insects aggregate. Thus, sugar is commonly called an attractant because flies gather around it in great numbers. The fallacy in this interpretation was pointed out by Dethier (1955). Sugar, rather than attracting insects, actually causes them to cease all exploratory movements. It is precisely this aspect, stopping of locomotion, which is responsible for aggregations at sugar. As Dethier (1955) showed, when flies moving at random encounter some sugar, the stimulus of the sugar causes the fly to stop its wandering and remain on the spot. Soon other flies are similarly "trapped"; so that an aggregation rapidly forms.

From a practical point of view any material like sugar which is, to coin a term, an "acceptant" (that which is accepted) is less efficacious than a true attractant because it merely holds in the vicinity insects which have blundered there in the first place; whereas, an attractant reaches out, so to speak, and pulls insects in

from the ambient population. Obviously, if a poison bait is to be made more effective, an attractant rather than an acceptant is desirable. Failure to appreciate the basic difference between the two may easily lead to misdirected research effort and missed opportunity.

The precise manner in which attractants work has been reviewed recently by Dethier (1956a). It was formerly believed that insects generally oriented to concentration gradients in nature. It is now known that such a means of orientation can operate over short distances only. The best evidence suggests that odor merely releases in a randomly flying insect an oriented flight (for a full discussion see Dethier, 1956a). Since the odor must be traveling downwind, the goal is eventually reached.

As has already been indicated, the goal is usually food or a mate. Various synthetic attractants have been successful in eliciting responses from certain plant feeding insects (see Dethier, 1947). The outstanding examples which come to mind are geraniol for the Japanese Beetle and methyl eugenol for the Oriental Fruitfly (Howlett, 1912; Steiner, 1952). Recently, a great deal of effort has been expended toward the study of sex attractants, particularly those of the silkworm moth and the gipsy moth. The early work was begun in this country by Haller and his associates (Haller *et al.*, 1944), and continued by Acree (1953a and b).

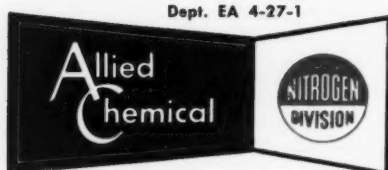
* Paper presented during 43rd annual meeting, Chemical Specialties Manufacturers Assn., Washington, D. C., Dec. 5, 1956.



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These efforts have resulted in the isolation of a material called gyp-tol. Little is known about the constitution of this material beyond the fact that it is an alcohol. In the meantime the Germans under the leadership of Butenandt (1940, 1941) have succeeded in isolating in pure form the sex attractant of the silkworm moth. From 313,000 female glands Hecker (1956) finally succeeded in isolating 5.25 mg. of 4-(p-nitrophenyl-azo-) benzoic acid ester of the attractant. The ester itself has no activity but after saponification, there is derived an alcohol which has a sex attractant unit of less than 10.5 gamma per milliliter. The method of bioassay employed in the isolation of this material consisted of applying the material to a glass rod which was held for one second before the antennae of a male. In response the male flutters his wings in a characteristic fashion. This is one phase of its orientation behavior; it is not directed locomotory response but precedes it and may be employed for bioassay. The lowest quantity of material which excited ten to twenty males was called one sex-attractant unit (weight units/ml.). For more refined bioassay, measurements were made of the electrical activity in the nerve coming from the olfactory receptors in the antennae (Schneider, 1955; Schneider and Hecker, 1956). The active material is believed to be an unsaturated primary or secondary alcohol with at least two conjugated double bonds and having a molecular weight not less than that of the C_{10} homologue.

Another promising line of approach is suggested by the discovery of Barnhart and Chadwick, (1953) that flies impart something to the food on which they are feeding which makes this food more attractive to other flies. It had been known for some time that some insects did act upon their food in this manner. The early work on bark beetles showed clearly that by infesting a tree the beetles rendered it more attractive

to other beetles (cf., e.g., Dethier, 1947; Anderson, 1948). The discovery of "fly factor" by Barnhart and Chadwick (1953) was confirmed subsequently* by Dethier (1955). At the moment the nature of this material is unknown although several laboratories are engaged in the problem of isolation and identification. It is probably in this direction that effort should be directed in the search for effective means of enhancing the attractiveness of poisoned baits.

Conclusion

THE foregoing brief survey of the status of knowledge of attractants and repellents emphasizes certain critical gaps in the existing body of information. There is a genuine need for effective repellents and attractants. The need for the former exists despite the spectacular development of insecticide and disease suppressing drugs. The increasing occurrence of resistant strains of insects, a phenomenon which is rendering many insecticides ineffective, means that other methods of control must be more thoroughly investigated than ever before. These other methods include biological control, environmental control, and the use of repellents. In this connection studies of the ability or inability of insects to develop strains resistant to repellents would be of value.

It appears unlikely that there will be developed any compounds or formulations which are *intrinsically* more repellent than those now available. On the other hand, there is no reason why repellents which retain their effectiveness over longer periods of time cannot be produced. Since the greatest enemy to long lasting repellency is the human skin itself, research directed toward a full understanding of the interaction between skin and repellents would be very profitable.

The role of attractants in the control of insects is indirect. At the present time attractants are employed principally to bait traps which are set out in areas where

incipient infestation by some insect is suspected. But attractants may be employed successfully to enhance the efficiency of poison baits.

In order that effective attractants be developed it is necessary that the distinction between attractants and acceptants be understood.

Two categories of agents which are truly attractants are: the products of the female sex scent glands and the unknown materials or interactions by which some insects enhance the attractiveness of food upon which they have fed. It is highly probable that further information regarding the sex attractants of moths and the "fly factor" produced by muscid flies would represent a highly significant step toward the ultimate development of effective synthetic attractants.

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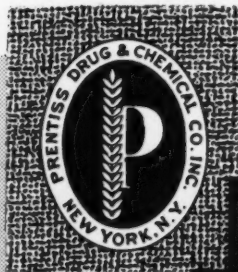
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Lysol's New Look

(From Page 89)

traditional merchandising of disinfectants into a new, advanced pattern symbolized by "Lysol's" almost completely new package. "Almost," because it retains certain "family" resemblances to its half-century-old predecessor, for identification reasons. Two of the colors—bright red and yellow—remain the same. However, combined now with brown and imposing white space, they take on a light, inviting look. One more souvenir of the previous "Lysol" package and bottle has been kept: the familiar signature of the brand name itself. But even this has been modified, modernized, and made easier to read.

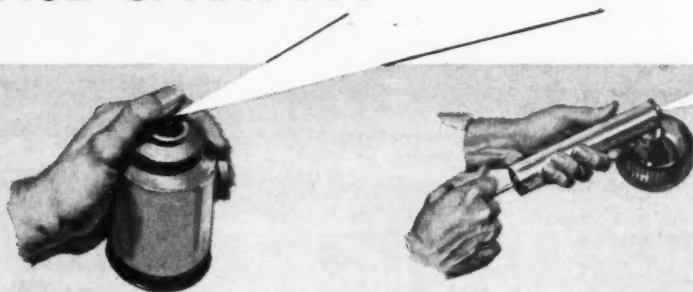
The shape of the bottle itself—once so standardized that the water tower at the Lehn & Fink plant in Bloomfield, N. J. was constructed to resemble the old bottle—has changed from a simple cylinder to a sleek oval, an "hour-glass" design shaped to fit the palm. The bottle blends the deep brown of the glass with the red and yellow of the label into a bright, attractive unit topped by a yellow cap. The cap is ribbed for easier opening and closing and the bottle shaped for easy gripping, so important to the housewife whose hands are often wet from household chores.

The carton—which pictures the bottle on its front panel—and the bottle, itself, list and illustrate numerous uses for the product, with complete instructions. This instructive package becomes a "silent salesman," indicating to the consumer the versatility of the disinfectant. It "sells itself," replacing the effort of the now absent sales clerk.

As an illustration of the forward thought behind the year-long designing of the new Lysol package, one of its important requirements was to pass a color television screen-test!

With a safe, effective formula

AS A SPACE SPRAY...



Du Pont Methoxychlor

(90% TECHNICAL METHOXYCHLOR OIL CONCENTRATE)

**gives knockdown
in addition to kill!**

Compare!

PEET GRADY TEST DATA—SPACE SPRAYS

	%Flies on Floor					% Dead 24 hrs.
	2 min.	4 min.	6 min.	8 min.	10 min.	
OTI	79	94	97	97	96	21
1.00% methoxychlor	16	<u>71</u>	<u>95</u>	97	99	<u>85</u>

71% KD in just 4 minutes proves methoxychlor is much more than a lethal agent alone. Du Pont methoxychlor is one of the least expensive insecticides you can use in many effective combinations. Contact the district office nearest you.



BETTER THINGS FOR BETTER LIVING ... THROUGH CHEMISTRY

E. I. DU PONT DE NEMOURS & CO. (INC.)
GRASSELLI CHEMICALS DEPARTMENT, WILMINGTON 98, DELAWARE

San Francisco 4, California 111 Sutter Street
Atlanta 8, Georgia 739 West Peachtree Street
Minneapolis 2, Minnesota 1207 Foshay Tower
Cleveland 14, Ohio 1321 National City Bank Bldg.
Wynnewood (Philadelphia), Pa. 308 E. Lancaster Avenue
Houston 25, Texas 1100 East Holcombe Blvd.

SOAP and CHEMICAL SPECIALTIES

and new convenient bottle, Lehn & Fink feels it has now virtually perfected the household disinfectant—but the exploration of new applications for the product is continuing in the laboratories.

One current project, for example, finds the Lehn & Fink bacteriologists searching for the answers to questions relative to "Ly-sol's" effectiveness against germs that have developed resistance to the antibiotic "miracle" drugs.

Sixty-eight years ago it was cholera, this year it is drug-resistant bacteria; yesterday it was telling the public about the germ theory of disease, today it is urging the public to make disinfection part of the routine of cleaning. The problems may change, but the desire to meet challenges continues at a company that prides itself on being "as young and as vigorous as it acts."

Jet Spray Bon Ami

(From Page 51)

cepted. In fact, acceptance followed closely the pattern indicated by our consumer panel test. The movement of the cleaner in these three markets was checked by store audits and also by consumers' reaction to the product as shown in house-to-house surveys.

About one month after "Instant Bon Ami Window Cleaner" had been introduced, Bon Ami Co. was under new management. Around the first of May, 1956, United Dye & Chemical Corp. had acquired working control of Bon Ami Co. Under the new management, there was a rapid succession of new developments.

In view of the spectacular early sales of the cleaner in the three markets, a decision was made to go national as soon as possible. It was decided to change the container from the 12-ounce Crown "Spray-Tainer" to the taller 14-ounce Continental Can Co. three-piece can with the stacking feature built in. Elaborate storage tests had been completed and it was

found that our cleaner showed no corrosion in a half-pound electrolytic unlined three-piece can, at accelerated temperatures, and also, after one year's storage at room temperature.

Name Change

A DECISION was made to change the name to "Jet Spray Bon Ami Push-Button Cleaner." The change was made to take advantage of the fact that formula #107 is excellent for a variety of light duty cleaning jobs such as sprucing up refrigerators, venetian blinds, counter tops, chromium appliances, bathroom tile, washable wall paper, painted woodwork, etc., in addition to window and mirror cleaning.

We also decided to back up the introduction of "Jet Bon Ami" on a national basis with a million dollar advertising and promotion budget. To handle the advertising, we selected Ruthrauff & Ryan, Inc.

By the end of May, a schedule for introducing "Jet Spray Bon Ami" on a national basis was drawn up, so that it would be in as many markets as possible in time for the big fall season. The new label design was approved and sales meetings were being arranged. Advertising copy, etc., were all pretty much underway. The schedule called for introducing "Jet Spray Bon Ami" to the New York consumer market in early August, the rest of the east by early September, and complete national distribution by the end of September.

This schedule put tremendous pressure not only on the pressure packager of "Jet Bon Ami", Continental Filling Corp., but also on the valve and actuator supplier, Risdon Manufacturing Co., the protective cap supplier, and other suppliers of the materials and supplies that went into the manufacture of "Jet Bon Ami".

Continental Filling was required to expand its facilities to keep pace with our demand. Other suppliers, such as Risdon Manufac-

turing Co., producer of the special three-phase mechanical break-up actuator and valve, had to expand their production facilities far above their original expectations.

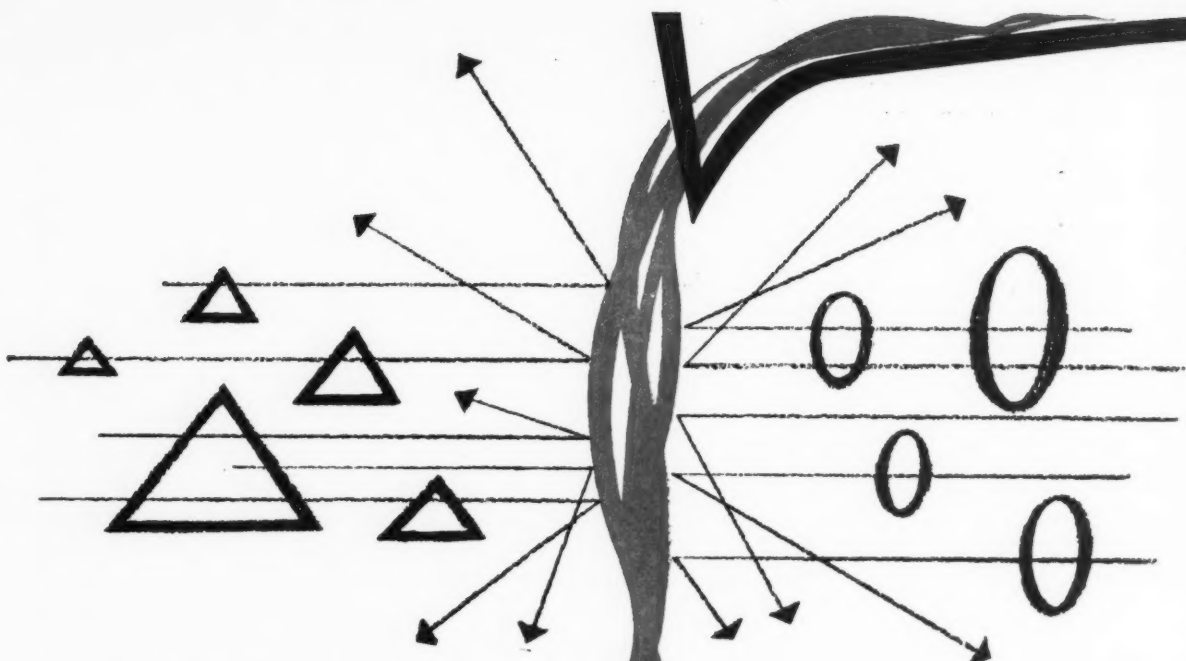
An article in the January 5th issue of *Chemical Week* described some of the difficulties that Continental Filling Corp. encountered in expanding to meet our requirements. In fact, for one four week period, Continental was using an outdoor filling line while the building was being constructed around it. Figures 3 and 4 are pictures of the filling line outdoors before the building was put up. Figure 5 is another shot of the filling line without the building around it. Figure 6 shows the filling line finally with a building around it and Figure 7 shows the completed building.

The introduction of "Jet Spray Bon Ami" went off on schedule. It was introduced in New York in August and the rest of the East in mid-September and it had national distribution by the end of September.

In Figure 8, the can and label of "Jet Spray Bon Ami" is shown as introduced on a national basis in 1956. The stacking feature of the can is demonstrated in Figure 9. This built-in stacking feature in an aerosol can, is achieved by constructing the base of the can to fit over the protective cap. We have found this built-in stacking feature with "Jet Spray Bon Ami"

Figure 10. "Jet Spray Bon Ami" with new label shown on left.





No oxidation, no rancidity—after a year and a half of storage! And during that time the sample (Neo-Fat® 94-04, Low Titer) was opened to the atmosphere every month for the first 6 months, every 3 months thereafter.

In the Mackey Test (which measures resistance to oxidation, based on the time required to reach 105°C), the swatch soaked in Armour Red Oil revealed no discoloration from oxidation after 5 hours 30 minutes. Yet, two swatches soaked with other well-known red oils charred and reached the point of internal combustion after 2 hours 5 minutes and 1 hour 5 minutes, respectively.

Depending on your needs for titer or color, Armour has other Oleic acids—Neo-Fats 94-10 (High Titer Red Oil) and 92-04 (Low Titer White Oleic).

Safeguard the stability of such products as soaps, cleaners, cosmetics and polishes. Always specify premium quality Armour Oleics!

SPECIFICATIONS (Neo-Fat 94-04, Low Titer Red Oil)

	Min.	Max.
Titer, °C.....	—	.5
Iodine Value.....	—	.95
Acid Value.....	197	202
UNSATURATED.....	—	1.0%
Moisture.....	—	0.4%
Color, Lovibond 1°.....	—	.3R—15Y
Mackey Test.....	5 hrs.	—

Write today for an evaluation sample, the Armour Oleic Booklet and Technical Bulletin on Soaps and Esters.

Armour Chemical Division
1355 West 31st Street • Chicago 9, Illinois

S-3

Please send me: ☐ Sample of Neo-Fat 94-04.
☐ Armour Oleic Booklet.
☐ Technical Bulletin on Soaps and Esters.

NAME _____
TITLE _____
FIRM _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

Resists Heat—Resists Oxygen

**TOUGH 18
MONTH TEST
PROVES
STARTLING
STABILITY
OF ARMOUR
RED OIL!**

ARMOUR

Leader in Progressive Fatty Acid Chemistry

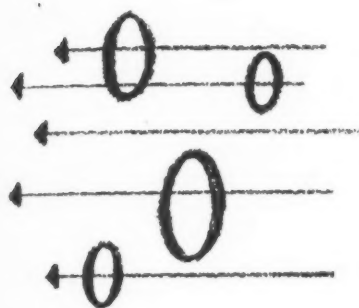


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Fatty Acids
Fatty Acid Derivatives
Industrial Oils

Armour's 2-System
Fractionation Produces...

HIGHEST PURITY FATTY ACIDS



Only Armour uses fractional distillation and solvent crystallization to produce a complete line of uniform fatty acids. These Neo-Fat® fatty acids are offered in single components in purities as high as 96%. Yet you pay no premium in price because Armour is basic in fat and oil raw materials. One of the Armour Neo-Fat Fatty Acids may be the chemical to help you produce a finer product at lower cost. Write us for samples and further information.

ARMOUR NEO-FATS— STANDARDS FOR THE INDUSTRY

● PRESSED STEARIC ACIDS

Neo-Fat® 18-54 Double Pressed
18-55 Triple Pressed

● SPECIALTY COCO ACIDS

Neo-Fat 8 Commercially Pure Caprylic
10 Commercially Pure Capric
12 Commercially Pure Lauric
14 Commercially Pure Myristic
265 Double Distilled Coco
Plus tailored blends of coco fractions

● SPECIALTY PALMITICS AND STEARIC ACID

Neo-Fat 16 Commercially Pure Palmitic
16-54 70% Palmitic
18 Commercially Pure Stearic
18-57 65% Stearic
18-58 70% Stearic
18-61 80% Stearic

will permit easier stacking on store shelves of the product, as well as, multiple case displays of the product stacked one on top of the other. Store managers are finding the stacking feature much easier to display consumer products.

As "Jet Spray Bon Ami" was introduced in more and more markets, additional quantities were needed. To meet this pace, Continental Filling was forced to double production each month from June through September. In many cases, the product was turned out with two and three shifts per day, including Saturdays and Sundays. Often it was necessary to air-ship, daily, valves, actuators, labels and other supplies. There were many times when production was on a questionable basis depending upon arrival of air shipments of various supplies.

"Jet Spray Bon Ami" has already taken over a fair share of the general cleaning market. How-

ever, in the consumer business, we can never rest on our laurels. With this in mind, a new label has been designed and will soon be introduced. At left in Figure 10 "Jet Spray Bon Ami" appears with its new label. We feel that this is a definite improvement over the previous label. In Figure 10 are shown the new and old labels side by side.

Sales strategy, an advertising program, new advertising copy, and merchandising plans have already been drawn up for the promotion of "Jet Spray Bon Ami" in 1957.

Much of the success of this undertaking, in which a number of new features for an aerosol product have been incorporated, can be attributed to teamwork, to the cooperative and organized efforts of all departments of Bon Ami Co., the advertising agency, the aerosol packager, our public relations group, and suppliers.

Strobane Aerosols

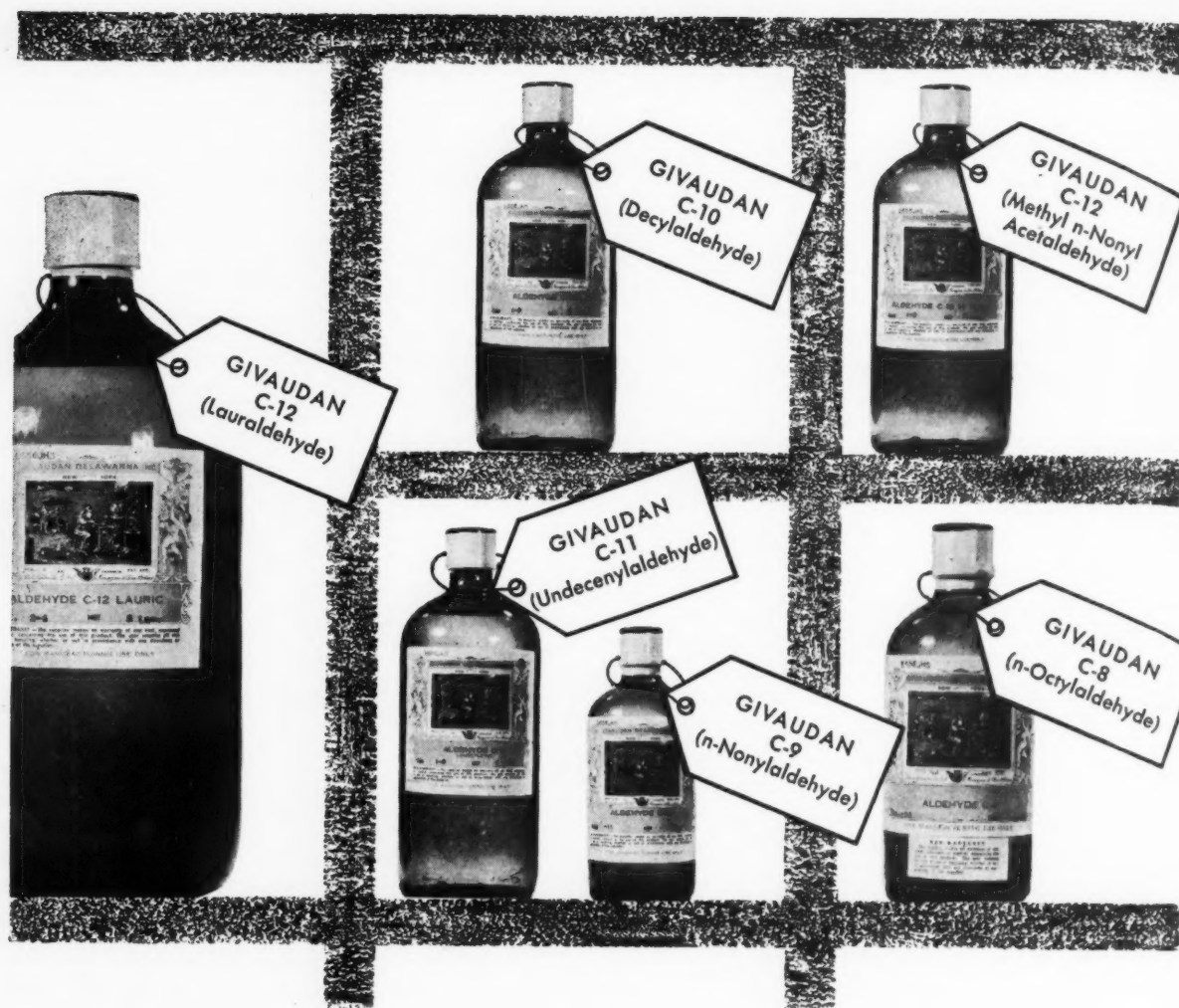
(From Page 95)

pellant ratio was necessary for suitable performance of "Strobane" insecticidal aerosols. An examination of the dispensing valves used in the 15/85 vs. 20/80 formulation studies showed that they had an internal orifice of 0.043 inches, and an external orifice of 0.016 inches. Effects of the geometry of valves on particle size have been pointed out (4). Assuming that change of valve design would affect particle size distribution, a number of experimental "Strobane" formulations were made up with various commercial valves. Evidence for this contention is shown in Table 8 where several other commercial valves were used with a two per cent "Strobane," 20/80 formulation. Table 9 shows insecticidal data for one of these valve combinations and demonstrates that valve dimensions can alter spray characteristics appreciably. Further, the various types of valves, even through they may have identical orifice dimen-

sions, will not necessarily produce the same type of spray distribution. This might be ascribed to the differences in the volume of the expansion chamber between orifices. No correlation between the rate of delivery from the dispenser and the particle size could be observed.

Summary

IN summary, these investigations lead to the conclusion that there exists an optimum particle size distribution for insecticidal aerosols which is clearly affected by the selection of the valve with respect to its geometry. In the case of "Strobane" insecticidal aerosols, this distribution appears to be characterized by an MMD value of about 17 microns. This is approximately the value determined for OTA. The valve factor seems to be of relatively greater significance than that of formulation changes within reasonable limits. The method of measuring particle sizes used here represents closely the tentative procedure as drawn up by the CSMA Sub-Committee on



*To achieve new and interesting
effects in perfume blending...*

GIVAUDAN FATTY ALDEHYDES

With these basic aromatic chemicals, powerful in character and versatile in application, Givaudan offers you many interesting opportunities to provide lift...bolster top notes...round out the character of basic odors...and prolong the lasting effect of perfume blends.

Givaudan's Fatty Aldehydes are produced under rigid control to meet the most exacting demands for odor quality, stability and uniformity. Stable in price and *constantly* available, they are among the great variety of basic aromatics regularly produced or custom-made by Givaudan for its customers.

Our staff will gladly help you select and use those best suited to your requirements.



GIVAUDAN-DELAWANNA, INC.
330 West 42nd Street, New York 36, N. Y.

SOAP and CHEMICAL SPECIALTIES

Particle Size Analysis of Aerosols. Its use is indicated as a relatively convenient method of providing technical information with which to assist in developing formulations having optimum insecticidal performance.

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Glycerine Outlook

(From Page 45)

averages, I am told, by as much as 80 per cent. Trying to prognosticate from total stock figures, it would seem to me, is a bit like trying to figure a poker game from the total number of high cards out, without knowing in whose hands they are! (Chart V).

My own conclusion is that the "commodity-psychology" of watching government stock figures as a guide to buying or selling policy is becoming obsolete, so far as glycerine is concerned. The direction of general business trends and predictions would appear to offer a more logical basis for deci-

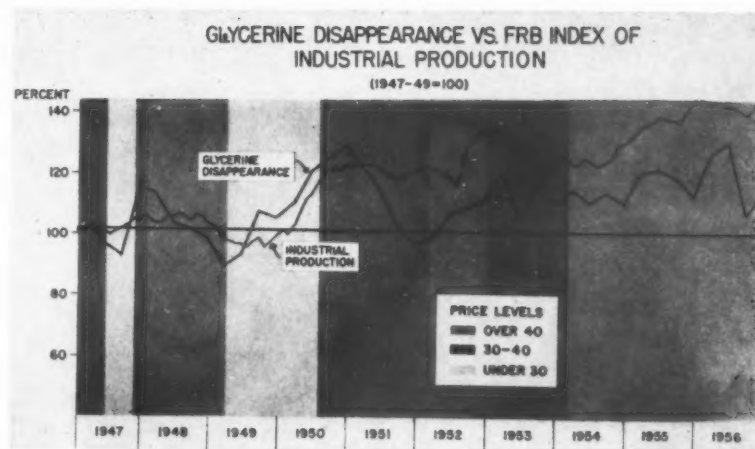


Chart VI.

sion. Another real simple approach would be to order glycerine as you use it and need it!

Evidence of a rather stable level of domestic glycerine used over the past two years was shown in Chart III. As you know, these are calculated levels of utilization, depending upon the accuracy of reports from consumers as well as producers. Past errors and revisions lead to a certain skepticism, particularly as to month-to-month totals. Yet the fact remains that glycerine appears to have fluctuated less than the output of some of the industries, such as resins, into which it moves in large volume.

This brings us logically to Chart VI, which is an updating of a chart shown in previous years in which glycerine use is compared with industrial production generally on an index basis. Frankly,

if we had maintained our 1947-49 ratio to the general production index, the United States would now be consuming about 286 million pounds. Considering the fact that, on a price-adjusted basis, glycerine is 25 per cent cheaper than it was then, you may be inclined to say: How come? or where are we missing our bets?

We have held our place poundwise, but probably not percentagewise, with the development of the more specialized polyols and modifications of alkyl formulations. As a humectant and plasticizer in cellophane and tobacco, glycerine continues to hold its place. Combined as mono and di-glycerides in emulsifiers and food additives, glycerine has made good gains. Explosives are another story, both because of glycol substitution and a trend from nitro-glycerine to ammonium nitrate for mining use. In the toilet goods field, it is difficult to establish a trend. Hundreds of new and specialized ingredients have no doubt gained relatively to the old basic formulations in which glycerine was so widely used, for reasons of novelty, if no other.

Overall, it seems to me, we are at a point which offers the same kind of opportunity to some new experimenter that was offered to Ray Kienle, in the late Twenties, when plentiful supplies of glycerine became so logically the opportune ingredient for the first

GLYCERINE SUPPLY LEVEL

BY MONTHS 1954-1956
SOURCE: U.S. DEPT. OF COMMERCE

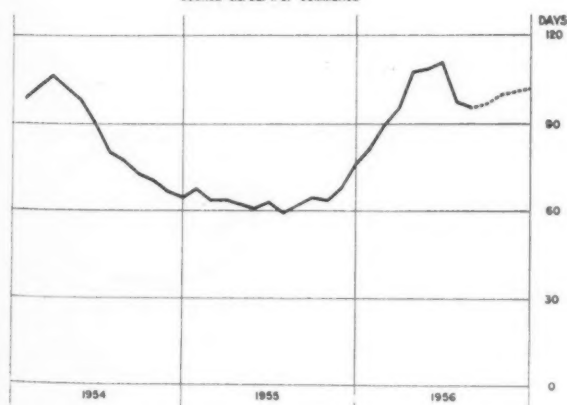


Chart V.

TOMORROW'S PRODUCTS TODAY...THROUGH ENJAY PETROCHEMICALS



Basic ingredients for LACQUER finishes with that look of luxury!

Everyone admires those high-quality, high-gloss lacquer finishes on today's fine cars. Many manufacturers of these automobile lacquers specify Enjay solvents because of their purity, uniformity of boiling range and closely controlled evaporation rate.

And, Enjay solvents and ketones play an important role, too, in the formulation of many other surface coating products: lacquers, enamels and removers for paint, varnish and enamel.

The recently expanded Enjay Laboratories are fully equipped to handle any surface coating problem related to the application or use of any Enjay petrochemical. Why not write or call for more information?

Enjay offers a widely diversified line of petrochemicals for industry:

ALCOHOLS & SOLVENTS: Lower Alcohols, Oxo Alcohols, Ketones and Solvents; OIL & FUEL IMPROVERS: Detergent-Inhibitors, V-I improvers, Oxidation Inhibitors; CHEMICAL RAW MATERIALS: Olefins, Diolefins, Aromatics; ENJAY BUTYL RUBBER & VISTANEX.



*Pioneer in
Petrochemicals*

ENJAY COMPANY, INC., 15 W. 51st STREET, NEW YORK 19, N. Y. Akron, Boston, Chicago, Los Angeles, New Orleans, Tulsa

of the alkyd resins. Here was our industry pouring money and effort galore into automobile radiators . . . when out of the blue this resin use comes along to outrun many times the best we ever did in the permanent automotive anti-freeze field. (Parenthetically, I understand that the ethylene glycol people are now concerned for their own 500 million pound future market, as gas turbine designs and other possibilities eliminating the conventional automobile engine cooling system move on the drawing boards.)

New Uses Desirable

THE desirability of the development of some large new use for glycerine, particularly one that might be applied in countries that are not highly industrialized, is certainly very much in the picture. Let us think "per capita" for a moment: If a population can be persuaded to use an extra two pounds of soap per person per year . . . to their everlasting health benefit . . . why can't they be persuaded to consume about *two tenths* of a pound of glycerine? Then, if and when detergents do take over the cleanliness job in those countries, there might be a ready made export market for all the glycerine from propylene that the BDSA and Office of Defense Mobilization claim we should have capacity for.

Is there a chance for developing a new market for glycerine, or a derivative such as the acetylated monoglycerides, in the field of personal consumption? Your guess is as good as mine . . . but there is certainly something significant to the fact that the safety and compatibility and acceptability of glycerine on, in and about the body, is the one area in which the challenge of other chemicals is easily and completely met.

Not only that . . . but just look at rising population figures, here and all around the world. For every acre of skin we decide to keep soap-clean, we had better have a few square yards of it kept glycerine soft.

Seriously, ever since World War II we have been dealing with a particularly opportune set of short-term checks and balances between glycerine supply and demand. Production declines from soap were balanced by new production elsewhere; market losses in field A were balanced by gains in market B; as South American exports rose, European demand gained. It all dovetailed nicely. No doubt we should realize, however, that the long-term balance of supply and demand is likely to require more searching world-wide review. Modern soap plants in countries such as Indonesia are built for glycerine recovery. How long after an Indonesian has money enough to buy soap, before he buys food in cellophane? How soon before a French farmer's wife gives up her soap bar in favor of controlled suds?

There are those who see natural glycerine supply outside the U.S. rising faster than glycerine

demand for, say, the next five years ahead. Others who have totalled up the construction of new plants to produce detergents abroad reach an opposite conclusion. And, of course, those who put the possibility of war in the equation would add another 75 million pounds a year or so to present U.S. capacity for glycerine-making.

For 1957, the pressure will certainly be on how to hold and extend all of glycerine's markets . . . particularly in the field of surface coatings. The possibilities of research . . . and the education as to glycerine's properties that underlies it . . . will seem brighter as the need to "go fundamental" grows. The idea that the problems of glycerine disposition will all be solved passively by soapmaking decline is no longer tenable. The approach to new markets will be positive and realistic, as new producers turn more and more to characteristics of the product itself — for their faith in its future.

Aerosol Analysis

(From Page 78)

of butane and "Freon" 114 solution. Resolution was adequate between "Freon" 114 (b.p. 38.4° F.) and butane (b.p. 21.2° F.) and again, impurities present in the cooling coils were detected by using maximum sensitivity. Traces of air, ethane, propane, "Freon" 12 and 11 were found in this solution.

	Volume %	Weight %
Air	0.25	0.07
Ethane	trace	trace
Propane	0.98	0.42
Freon 12	2.65	3.14
Freon 114	37.8	63.00
Butane	57.8	32.78
Freon 11	0.44	0.59

(To be concluded)

Household Hazards Bills

The labeling of household products containing poison is proposed in House Bill 323, introduced recently in Indiana. The bill provides for registration of such products with a fee; defines a poison, requires registration number on label; and specifies type sizes for

labels. Penalties for violation of the bill are provided for. If passed the act takes effect Jan. 1, 1958.

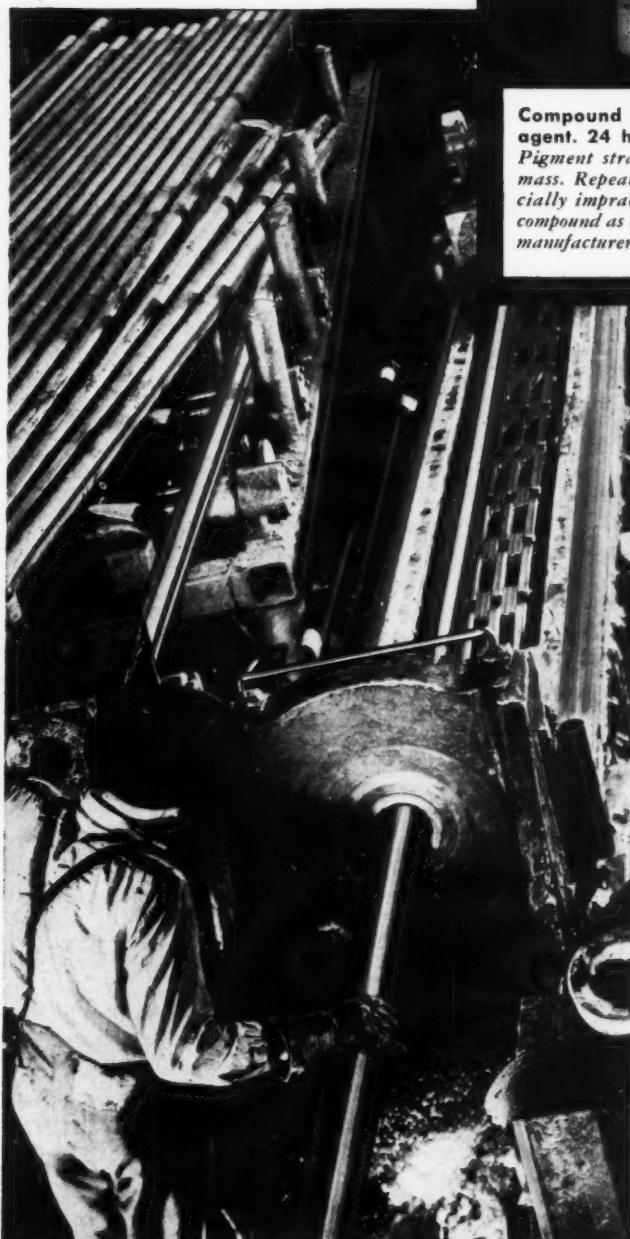
The drug and poison law of Nebraska will be amended to cover carbon tetrachloride upon passage of pending Legislative Bill 521.

Labeling and sale of hazardous substances in Texas is proposed in House Bill 194. The term hazardous substance is defined and expressly includes the likelihood of bursting of the container in which the substance is contained. Exceptions from the requirements of the act are provided for products labeled in compliance with and registered under the Federal Insecticide, Fungicide, and Rodenticide Act. The Chemical Specialties Manufacturers Association requests members to send comments at the earliest possible date.

An amendment to the Texas Insecticide and Fungicide Act is pending as House Bill 43. If passed the bill will make the provisions of the fungicide and insecticide law applicable to household insecticides, including "any substance or

News about

B.F. Goodrich Chemical *raw materials*



Compound without suspending agent. 24 hours after agitation. Pigment stratified into a compact mass. Repeated agitation commercially impractical. Quantity use of compound as required by steel tubing manufacturers impossible.



Same compound containing Carbopol 934. 24 hours after agitation. Pigment suspension stable. Compound homogenous and of uniform viscosity. Even after 30 days pigments won't settle out.

CARBOPOL 934

suspends heavy pigments
... makes superior metal
drawing compound possible

Objective: Prevent separation of heavy pigments in an oil emulsion lubricant developed by H. A. Montgomery Company of Detroit; used for drawing stainless and alloy steel tubing.

Solution: Montgomery used Carbopol 934—the unique, water-soluble suspending agent made by B.F. Goodrich Chemical Company. Problems solved! The pigments stay in suspension, the compound has consistent viscosity and exceptional stability.

Better product: This superior metalworking compound—called EP-COAT—can now be made up in large quantities and stored for long periods. It replaces more expensive chemical undercoating in tubing manufacture.

For cosmetics, pharmaceuticals, paints, polishes and other products, Carbopol 934 has proved equally outstanding as a suspending and thickening agent. For experimental samples and technical information, write Dept. JH-2, B.F. Goodrich Chemical Company, 3135 Euclid Ave., Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

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CHEMICALS

B.F. Goodrich

GEON polyvinyl materials • HYCAR American rubber and latex • GOOD-RITE chemicals and plasticizers • HARMON colors

B.F. Goodrich Chemical Company
a division of The B.F. Goodrich Company

mixture of substances offered for use for preventing, destroying, repelling or mitigating any insects or pests which may infect household goods."

★

New Cowles Silicates

Two grades of potassium silicates have been added to the silicate line of Cowles Chemical Co., Cleveland, it was announced recently by Earl F. Clark, manager of the heavy chemical department. The two new products, No. 28 and No. 40, are designed for use as an adhesive and binder. Silicate No. 40, which has a higher alkaline content, can also be utilized as a builder in potash soaps and for rapid-sudsing soaps and synthetic detergents normally prepared in liquid form.

Calspray at 50

(From Page 81)

tives. Under this category come such activities as are accomplished through the teamwork of advertising, sales promotion and the sales departments. For example, the recent El Paso Flower Show at which the "Ortho Garden Clinic" — a continuous program of lectures, movies and demonstrations — was a feature attraction. "Ortho" sales representatives arrange and handle such presentations locally — backed by materials and suggestions supplied by advertising and sales promotion.

These departments again team up to promote dealer and distributor salesmen contests, offering such attractive sales incentives as all-expense trips and merchandise awards.

To summarize, a manufacturer's advertising and sales promotion department literally can offer the dealer the equivalent of extra personnel, and substantially augment his own outlay for advertising and promotion.

Marketing: This department is listed last, not out of modesty because this member of the team is Mr. Cannon's responsibility, but because the best efforts of the rest

of the team would not be utilized by the dealer if he were not (1) assured a satisfactory profit margin and assured of the company's integrity in protecting his investment in every possible way, (2) assured of prompt deliveries and attentive service by sales representatives who are university graduates and thoroughly trained to know their product line and to assist the dealer in productive store promotions.

Many other departments, of course, make important contributions to Calspray's functioning as a corporation, but these four are picked out as the most direct "keys" to satisfactory trade relationship in the garden and home line. Mr. Cannon pointed out.

★

Look at the Future

IT is the custom at any such important milestone as a 50th anniversary to take a look at the future as well as the past. The future for garden and home pesticides looks very good indeed. Demand, since Calspray started the small package line in 1926, increased steadily until 1945 when World War II Victory Gardens boomed sales. Sales did not diminish when Victory Gardens, *per se*, were no more. The housing boom that followed the war brought more gardens into being and 60 million families are becoming more interested and better educated in the use of garden chemicals.

Then, too, an ever-increasing variety of more effective chemicals had been made available. The trend towards de-urbanization continues and although lawn and garden space for the average home is small, the importance of the health and appearance of what is planted

in that garden space has increased. Gardening has become the nation's number one hobby and represents an investment of time and money that needs the protection of the "insurance" afforded by pesticides. They save money, they save labor and they give pride and satisfying results.

Another trend that directly affects pesticide sales is the increasing importance the people of this nation place on sanitation. We have become fully aware of the relationship of insect pests to disease and demand sanitary conditions everywhere that food is prepared, packaged or served as well as in our own homes and neighborhoods.

The over-all annual volume of pesticide dollar sales in the United States was 75 to 100 million in 1939. In 1954 it had risen to \$300 to \$400 million and the forecast is a 284 per cent increase by 1975. Calspray expects the increase in garden and home pesticide sales to be proportionate.

Soap, Detergent Sales

(From Page 56)

New Products

NEW product developments apparently contribute to rising consumption as indicated in the packaged detergent market data discussed earlier. To support these contentions further, we again examined 40 commodity groups for which Nielsen Index records are available. We found that in the groups where major product developments have occurred in recent years, sales increases were significantly better than for unimproved product groups.

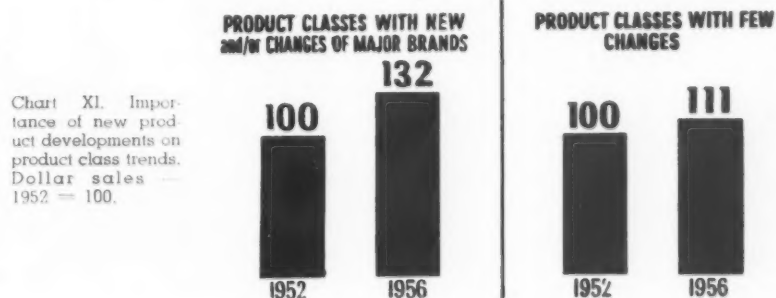


Chart XI contains two sets of bars, one for product classes with new and/or substantial changes of major brands, the second for product classes with few changes. Between 1952 and 1956 those product classes in which important product changes occurred averaged a 32 per cent increase in sales, compared with an 11 per cent increase for the rest. All available product classes that experienced major new developments since the end of World War II were broken down into two broad groups: 1) Those in which the new product developments were predominantly made to offer increased convenience of use and, 2) Other product classes in which changes were made, mostly, in new product forms, types, packages, colors, etc. Sales trend data for these groups are shown on Chart XII. From the chart it can be seen that both groups were successful in increasing consumer sales and to about the same extent over the past four years. Consumer sales trends for products with major built-in conveniences in use and those which have been modified as to types, flavors, sizes, etc. are shown at left and right, respectively, in Chart XII. The index for products with major built-in conveniences in use (left) moved up 33 per cent between 1952 and 1956, compared with 30 per cent for products which had been otherwise improved.

To obtain an indication of consumers' resistance or lack of resistance to higher prices in those cases where some demonstrable product advantages have been add-

ed, we selected all the new and/or changed brands (not product classes), which had increased their convenience of use, and divided them into two price categories. We placed in the first group those brands that were more costly to the consumer than the regular products. In the second group were those products that were offered to the consumer at equal or lower cost than the regular products. Groups one and two, plus an index for all convenience items, are shown in the three sets of bars in Chart XIII. The average increase for all brands (as shown in two bars on left side of chart) was about 124 per cent, moving from 100 to 224 points for the period from 1952 to 1956. While the data shown on Chart XIII did reveal a better trend for those products that offered convenience of use and a price saving to boot, as shown in the center two bars, the sales gain of 98 per cent registered over a four-year period by the higher price brands suggests that price in today's economy is probably not a major stumbling block to a sale. However, the consumer must be convinced that he or she is being offered something worthwhile.

No one disagrees with the need for new product development. But there does seem to be a parting of the ways when it comes to deciding when it should be done. Timing must be carefully considered in any individual situation. No generalization is possible as to whether a manufacturer should pioneer a product change with its

inherent risks, or wait until someone else has pointed the way. However, our studies strongly indicate that those with a good understanding of the consumer's needs and desires can profit handsomely in a pioneering venture. There is one qualification: They must have a certain amount of creative imagination and a willingness to take a chance. The originator, innovator, or pioneer, or whatever you choose to call the brand that took the risk, in 14 out of 17 instances examined, after a minimum period of at least three years ended up with a substantial sales advantage over similar products that followed the leader. The sales position relationship among eight pioneer brands and their respective followers is shown in Chart XIV. In each case the sales volume of the pioneer brand has been set at an index of 100. Only in examples C, E and G have the number two brands come close to their predecessors after a reasonable period of time. In most of the other cases, the first brand is far out in front.

A continuation of the comparison between pioneers and followers for an additional number of cases is shown in Chart XIV. In this chart, incidentally, we included three pioneers who were far outdistanced by their immediate followers. However, it is only fair to point out that while these brands by definition are pioneers, and unsuccessful ones at that, by comparison, even in two of these particular cases there were unusual circumstances

Chart XII. Importance of new product developments—by type. Dollar sales—1952 = 100.

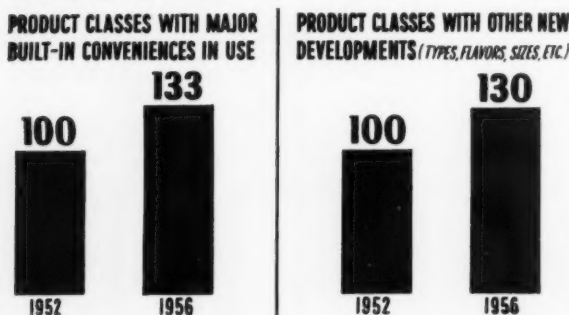
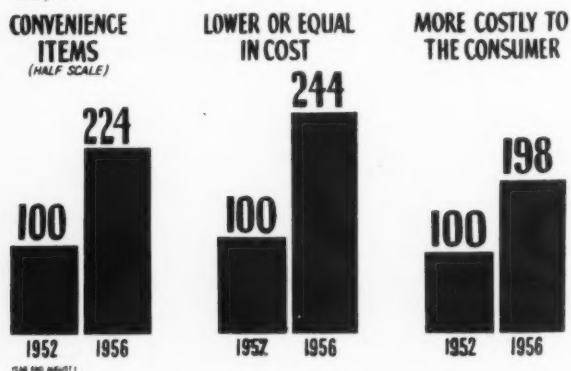


Chart XIII. Comparative sales trends—convenience items. Year End Aug. 1.



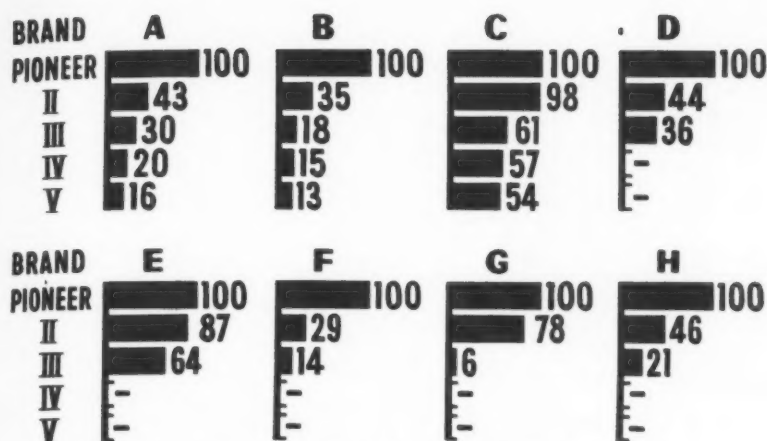


Chart XIV. Successful pioneers vs. followers.

present whereby the followers introduced substantially improved products of the same type. Therefore, the followers in these cases, by stretching the definition a bit, might be labeled as leaders too.

A composite box score or a "rule of thumb" measurement for successful pioneers and their followers, shown individually on Chart XIV, is presented on Chart XV. For purposes of this computation we merely indexed the present pioneers' combined volume at 100. By this comparison the originator brand averaged two to one in sales over the second brand and four to one over the third brand after a minimum of three years.

There seems to be nothing unusually profitable about being an imitator, even a good one. While the initial investment by the pioneer might be considered high, the

going rate after a reasonable period of time showed a more favorable relationship between advertising (including promotional) cost and sales revenue for the leader in most of the cases we examined. It can be argued, and rightfully so, that such differences could exist just by virtue of the spread between actual sales levels. However, the former thought appears an interesting possibility worth mentioning.

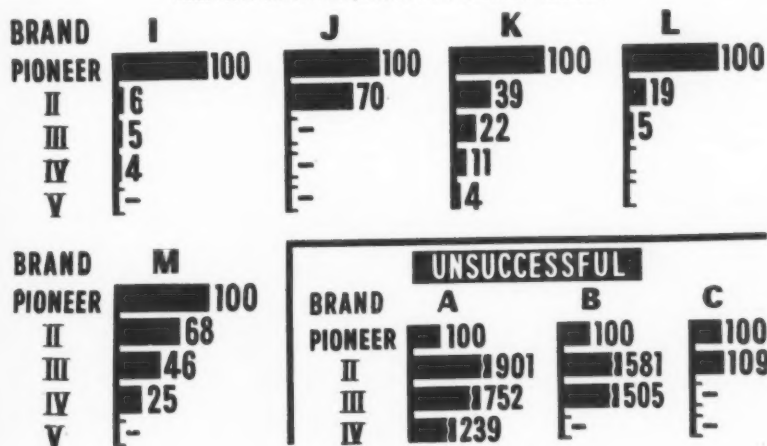
Testing Essential

THE situation depicted on the preceding three charts is, of course, one of the problems or opportunities, depending upon one's viewpoint, confronting manufacturers and producers today. It is obvious that these new developments are a major factor in determining whether or not sales progress is accomplished for an indi-

vidual brand. On the other hand, new developments present a good many hazards, a situation which positively dictates that such contemplated moves be made only after a thorough appraisal of the product and its opportunities. Operating under today's strict marketing requirements, sound testing is the best, if not the only way, to get the right answers. In our experience, we found that the unsuccessful pioneers, those that find themselves in the position noted for the three cases described on Chart XIV, or others that have tried, failed and passed on, had violated, in most cases, one or several of the fundamental rules of sound marketing. This might have been avoided if the original product appraisal had been complete. With today's competitive marketing conditions, it doesn't take alert competition long to create an untenable position for the new product when it is found lacking.

There are instances where product introductions have failed because they were poorly administered. However, surprisingly enough, in a high percentage of unsuccessful cases that we have observed over the years, the primary reason for market failure appeared to be traceable to poor product or to a product that was not demonstrably better to the consumer. It seems reasonable to assume, therefore, that if the product in question had been tested soundly it should have been done: 1) In the laboratory to determine whether the new product performs demonstrably better than competition; 2) At the consumer level to insure that the product's superior performance can be recognized by the consumer and, 3) In the retail store to determine under actual sales conditions whether the consumer will purchase the product in sufficient quantities at the established price. Somewhere in the testing process the weakness would have become apparent. Consequently, the necessary doubt as to the wisdom of introducing the new product would, in time, have been raised.

Chart XV. Successful pioneers vs. followers (Cont'd).



"Another product safely shipped in Inland 'protection-eered' containers"

A SOFT TOUCH FOR FINE FABRICS



A great many people had a hand in this fine fabric "creation"—including the folks at Wallerstein Co., Inc., New York. Wallerstein is the producer of Rapidase, an enzyme preparation that "desizes" fabric after it is woven. Once the sizing is removed and the fabric has been given a "soft touch" by Rapidase . . . it is ready to be dyed, bleached or finished.

To maintain product quality and stability, Rapidase is shipped in Inland "protection-eered" containers. Inland

specialists use a lining which prevents loss of enzyme activity during transit and storage. Result: Wallerstein's quality control of Rapidase is carried all the way to their customers.

Inland "protection-eered" containers have solved tough packaging problems for some of the country's leading companies. Perhaps they can solve yours. Write Bob Boecher, Dept. 332D.

**the right container, with the right lining for your product*

INLAND STEEL CONTAINER COMPANY

Division of Inland Steel Company • 6532 South Menard Avenue
Chicago 38, Illinois • Plants: Chicago, Jersey City,
New Orleans, Cleveland and Greenville, Ohio

Full line of steel and stainless steel shipping containers, including
galvanized and heavy duty ICC drums.



"It's Better to
Ship in Steel"

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Packaging...

AEROSOLS • LIQUIDS • PASTES • POWDERS

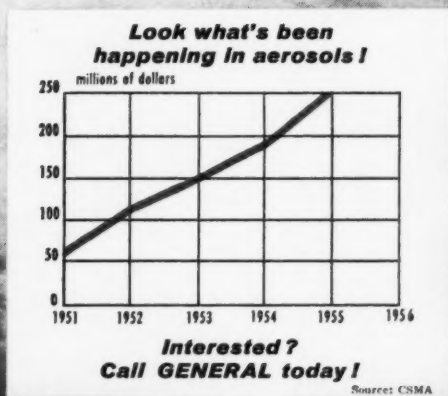
New "Golden Hand" aerosol shave foam of C. A. Woltman Elpers Royal Soap Company, Amsterdam, Holland, soap makers since 1554. Six and one-quarter ounces are packed in can by Aerosol Co. of Holland, N. V., contract fillers, Hilversum. Gold rubber hand screws over valve to form protective cap.

Automotive
Chemicals
Cleaners
Detergents
Deodorants
Disinfectants
Floor Products
Insecticides
Laundry Bleach
Metal Cleaners
Moth Products
Polishes
Shampoos
Shave Products
Soaps
Liquid Starch
Toiletries
and other
Chemical Specialties

*A market for over 20
billion packages annually*



AEROSOL



PACKAGING

can start a tidal wave of sales *for you!*

You've seen it happen again and again. A familiar product . . . new packaging in aerosol form . . . and sales roll up powerfully with the force of a tidal wave! Or a new product makes its first appearance in aerosol containers and becomes an overnight success.

Perhaps *your* next big opportunity lies in aerosol packaging.

If your product can be sprayed, brushed on, dusted or daubed, it's a candidate for aerosols. As your first move, call General Chemical. We will help you develop a formulation with the right pressures and compatibilities for product and container without cost or obligation . . . and can direct you to capable contract fillers who will put up your product in aerosols for test marketing and handle full commercial production, too.

To arrange for a special presentation on aerosols and the fast-growing aerosol market, write or call "Genetron" Department, General Chemical Division, Allied Chemical & Dye Corporation, 40 Rector Street, New York 6, N. Y.

genetron[®]
aerosol propellants



*The Right
Propellant
for Every
Aerosol Need!*

Call on General for:



Free fact-packed technical manuals, market information



A complete aerosol research and development laboratory



Data on many promising new types of aerosols



Field assistance with propellant storage, handling

GENERAL CHEMICAL DIVISION • Allied Chemical & Dye Corporation
40 Rector Street, N. Y. 6, N. Y.

To help sell the products you package in Canco containers...

...Canco sponsors NBC NEWS on TV during 1957



—broadening the famous "oval" campaign to consumers!

This year, news-conscious America is seeing Canco's oval trade-mark on television—and learning why it symbolizes packaging leadership . . . how it helps everyone to "live better, more conveniently, for less money."

To tell its message, Canco has chosen NBC NEWS on TV, featuring Chet Huntley and David Brinkley. It is TV's *highest-rated* news show, carried by 89 stations with a potential audience of 35 million TV homes!

To get the full benefit of this powerful and dramatic campaign, make certain *your* containers carry the Canco oval—the trade-mark recognized by more and more consumers as their guide to quality containers.



Tune in the next Canco NBC-TV NEWS Show—March 11, and alternate Mondays thereafter. See your local newspaper for time and channel.

AMERICAN CAN COMPANY New York • Chicago • San Francisco

why did

Tweed

come to **CONTINENTAL?**

obviously because of

Excellence **IN AEROSOL FILLING**

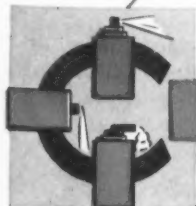


Twenty-five years of packaging and engineering experience and pioneer knowledge of aerosol filling have brought about techniques in quality control which are above and beyond what is usually expected.

Our extra attention to excellence of quality is respected by leading manufacturers of cosmetic, soap and chemical products. It is a plus benefit to you, in addition to good service, economy, laboratory development facilities, and plants which are well equipped and strategically located.

CALL CONTINENTAL FILLING CORPORATION for full information on contract or custom filling of Aerosols and liquids.

WRITE FOR FREE BOOKLET: "An Ideal Becomes Real" . . . the step-by-step picture story of excellence in aerosol filling at Continental.



CONTINENTAL FILLING CORPORATION

MAIN OFFICE: 123 N. Hazel, Danville, Illinois, Phone 742

N. Y. OFFICE: 527 Lexington Ave., New York 17, Phone Plaza 3-3130

PLANTS in Danville, Illinois, and Hobart, Indiana

**Vital Part Of Another,
Water-Base Aerosol
Packaging Success**

VALVE BY RISDON



RI-82

SEND FOR THESE FREE BOOKLETS

Both the 5210 valve and its glass container counterpart, the GB valve, are described and illustrated in detail by these bulletins. The "Micro-Mist" and other actuators are also covered. Ask for 5210 and GB valve bulletins.



THE RISDON MANUFACTURING COMPANY
Valve Division, Naugatuck, Conn.

The new push-button bonanza for housewives—Jet-Spray BON AMI is one of the latest pressurized products dispensed by a Risdon 5210 valve.

This is a water-base product which cannot be mixed with the propellant; therefore a three-phase dispensing system is used. This system calls for a 5210 valve equipped with a Risdon "Micro-Mist"† actuator* which produces a fine, atomized spray by a mechanical shearing effect. For conventional aerosols (2-phase) the valve is supplied either with standard Risdon actuators or with "Micro-Mist" actuators when a finer, drier, wider-cone spray is desired.

The 5210 valve has proven an ideal control for virtually the entire range of aerosols. It uses no spring and is made entirely of nylon and rubber except for the metal mounting cup. It is suitable for vertical or horizontal sprays or for foam dispensing. This same basic valve is also available adapted for glass or plastic containers.

* Trade Mark

† Patented

RISDON VALVES FOR:

Pressurized Products Packaged in Glass, Metal or Plastic Containers.

DISPENSING:

Conventional Aerosols, 3-Phase Products, Alcohol Base Products, Water-Base Products, Foam Products, Powder Sprays, Metered Sprays, Ultra-Low Pressure Applications, Products Containing Propellant Emulsions or Dispersions, etc.

Containers for Automotive Products

In testing containers performance of each portion of each variable should be considered in comparison with other variables.

Part II. Test Procedures

By R. G. Nugent and G. E. Curtis*

Technical Service Division, American Can Company, Maywood, Illinois

Treatment of Samples

SAMPLE cans in a test pack may be treated in many ways in order to develop the information for which the test program was initiated. In most tests the temperature of storage is of considerable importance. Within limits, elevated temperatures may be employed to hasten the storage process. It is a recognized concept in physical chemistry, that the rate or speed of a simple chemical reaction is partly a function of temperature. The increase in the speed of the reaction is determined, in part, by the heat of activation for that particular reaction. Thus, it may be concluded that in a complex system involving a product with many components and the several portions of a metal can, several different reactions are possible. Each reaction would have its own heat of activation and would react differently to increases in temperature. With this principle in mind, it is not difficult to conceive that high storage temperatures may speed up reactions which are not ordinarily significant at normal temperatures. The results of these reactions may become the predominant observable storage effects. They may, therefore, lead to erroneous conclusions regarding container performance at temperatures normal

to commercial storage and distribution.

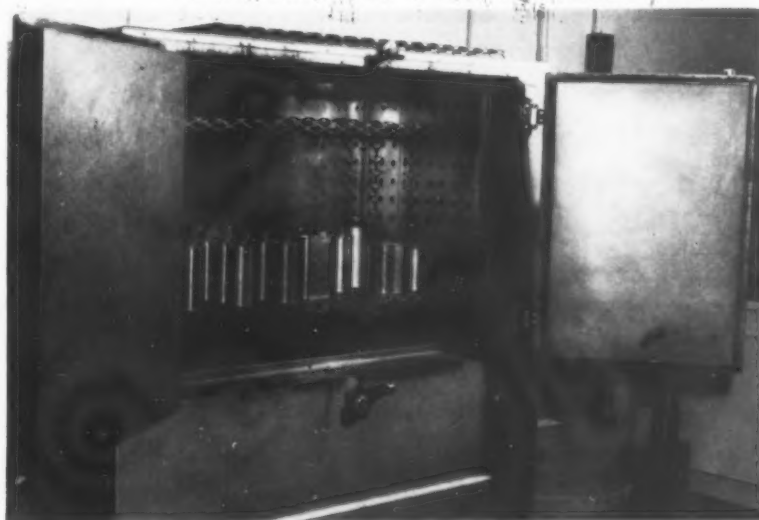
Studies have been made over a period of several years with a wide variety of products in an attempt to correlate short term, high temperature storage effects with long term, normal temperature storage effects. At various times comparisons have been made between samples stored at many temperatures ranging from 0°F. to 190°F. Thermostatically controlled ovens and refrigerated rooms were used for these comparisons. It is a very rare instance in which storage temperatures above the 98°F. to 100°F. range produce translatable results. Therefore, it is generally considered that unless normal us-

age and storage of the packed product involves prolonged exposure to temperatures over 98°F., those higher temperatures should not be used as a means of accelerating storage tests.

It is believed that 98°F. storage usually doubles the effects of normal storage, but in practice it is not considered safe to apply this factor in computing normal storage equivalents, unless at least six months or 98°F. storage is involved. This precaution should be taken because in some parts of the country and under some storage conditions, temperatures of 95°F. and higher are normal for many weeks at a time.

There are unusual cases

Oven for storage at 120° or higher temperatures.



* Presented at the 43rd Annual Meeting of the Chemical Specialties Manufacturers Association, Washington, D. C., Dec. 5, 1956.

This Gun is Loaded!

WITH DESIGN FEATURES THAT MEAN MAXIMUM CUSTOMER SATISFACTION

Anti-clog SPRAY GUN



- **ANY-DIRECTION VENT**—even sprays upward, for under side of foliage. Preformed in just the right size; no danger of user punching hole too large or too small for proper use.
- ◆ **CLOG-PROOF FEED**—Scientifically perforated underside of plug permits powder to pass through... prevents lumps from clogging discharge vent.
- **EASY-FILL TOP**—Large 1 1/8" friction plug.
- * **WAX-COATED INNER TUBE**—Special wax gives moisture protection and smoother pumping action.
- **SPECIAL FELT INNER VALVE**—Allows easy passage of air during pumping action, yet effectively seals in powder.
- ▲ **PATENTED BELLOWS VALVE**—Positive operation—opens on back stroke to admit air into pumping chamber; closes on forward stroke, for efficient pumping action.

..and for added ammunition..these COMPANION PACKAGES by R. C.

For refill, or for related use, R. C. Cans offer many extra features: paraffin coating, special moisture proof laminations, and a wide variety of tops (with or without indentations for sifting).



R C CAN COMPANY

MAIN OFFICE and Factory 9430 Page Blvd., St. Louis 14, Mo.

Branch Factories: Arlington, Tex.; Rittman, O.; Turner, Kans.

W. L. BENNETT, 126 S. Third St., Minneapolis 1, Minnesota • CAN SUPPLY COMPANY, 1006 W. Washington Blvd., Los Angeles 15, California • C. E. DOBSON, 1003 Carondelet Bldg., New Orleans 12, Louisiana • L. C. MORRIS CO., P. O. Box 8042 Station F, 1156 Dalon Drive, N. E., Atlanta 6, Georgia • S. W. SCOTT & SON, 608 McCall Bldg., Memphis 3, Tennessee • R. C. CAN COMPANY, 225 W. 34th Street, New York City, N. Y. • PALMER SUPPLIES CO., OF FLORIDA, Palmer Building, 209-211 E. Robinson, Orlando, Florida • JOE ROVIN, c/o Chicago Transparent Bag Co., 4806 W. Chicago Ave., Chicago 51, Illinois.



which produce increased storage effects in samples held at lower than normal temperatures. Where this is known to occur, storage of samples at 40°F. or 0°F. may be indicated if normal usage of the filled container involves exposure to such temperatures. One example of this is antifreeze in which the ethylene glycol is prone to form chemical complexes at lower temperatures which are not stable at normal temperatures. This characteristic can lead to greater activity at such lower temperatures.

Regardless of the choice of accelerating temperature, every test should include control samples held at ambient room temperature as a double check on the results observed in the containers stored at special temperatures. As a further check on product changes caused by elevated temperatures, test tube samples or other product controls should also be stored at each test temperature.

In doubletite, oblong and other reclosure cans, inverted storage or storage of the filled can on its side may produce diverse effects. If this is a definite possibility, a few inverted cans should be placed in storage together with the normally upright samples to determine if there are any objectionable effects on any container part as a result of such handling.

Other test variations may be conducted to simulate commercial practices. Pour tests from reclosure containers are made by pouring about five percent of the product from the test samples several times during the first six months of storage. This permits aeration of the can and replenishment of the oxygen several times. Sometimes, when aeration is a factor, cans are closed and stored with faulty closures to simulate the worst possible filling and closing conditions.

If there is any doubt regarding seepage of product from a questionable closure, clean filled cans may simply be placed on a clean paper for several hours or days. Non-volatile materials will leave a

Table I. One Pint "Q" Style Container Test Pack for an Automotive Product

Container Plate & Enamel Variables:						
Can Code	Bottom		Body		Top	
	Plate	Enamel	Plate	Enamel	Plate	Enamel
1	#25	None	#25	None	#25	None
2	#25	Phenolic	#25	Phenolic	#25	Phenolic
3	#25	Phenolic-vinyl	#25	Phenolic-vinyl	#25	Phenolic-vinyl
4	#25	Epon	#25	Epon	#25	Epon
5	#25	Epon-vinyl	#25	Epon-vinyl	#25	Epon-vinyl
6	1.25#	None	1.25#	None	1.25#	None
7	SCMT	None	SCMT	None	SCMT	None
Side Seam Construction				Cap Liners		
1. Enameled Cans — Cemented				1. Tin Foil		
2. Plain #25 — Outside Soldered				2. Lead Foil		
3. Plain #25 — Inside Soldered				3. Special Coated Papers		
4. Plain 1.25# and SCMT — Inside Soldered						
Storage Temperatures:						
1. Room Temperature						
2. 98°F.						
Examination Schedule						
Storage Temp.	No. of Cans/Variable/Exam.			Exam. Dates		
98°F.	3			1 Mo., 3 Mo., 6 Mo., 12 Mo.		
R.T.	6			When needed or at 6 Mo.		
Cans in reserve — 6 cans @ Room Temperature.						

definite stain if seepage occurs. In other cases chemical treatment of the paper may be used to detect seepage. If the container under test is hermetically closed, the test may be accelerated by holding the closed container in a vacuum chamber under five inches of vacuum. Such a procedure can also be used to simulate the conditions met when cans are packed at sea level and shipped to higher altitude locations.

Packaging highly volatile materials in reclosure containers may result in loss of product because of the high vapor pressure. A laboratory check of the ability of cap liner materials and closure procedures to prevent this loss is easily made by weekly weighings of filled cans stored at 98°F. and room temperature. After a few weeks, a weight loss rate can be established for each variable and a suitable closure selected.

A few highly alkaline products, such as liquid radiator cleaners, react very differently to climatic conditions. In such cases it has been found advisable to store samples not only at high temperature,

but also under controlled high humidity conditions in order to learn the full story of performance characteristics of product and container.

In addition to the specialized test procedures just noted, there are probably many other unusual ways that samples may be handled to develop various specific pieces of information that may be desired. The ingenuity of the packaging technologist in designing such test programs is indispensable for evaluating all possibilities.

Table I summarizes the organization of a simple container test pack for an automotive product.

Container Examination

The actual examination of the containers begins with observation of the can exteriors immediately after removal from their storage rooms. Any effects on the cans attributed to the product are noted at this time. For example, a minute amount of product on the exterior might indicate a very tiny perforation of the plate.

In special cases such as the

*glass
containers
move
more
chemical
specialties*



*Use Anchorglass® containers
sealed with Anchor® caps*



... because they protect the contents

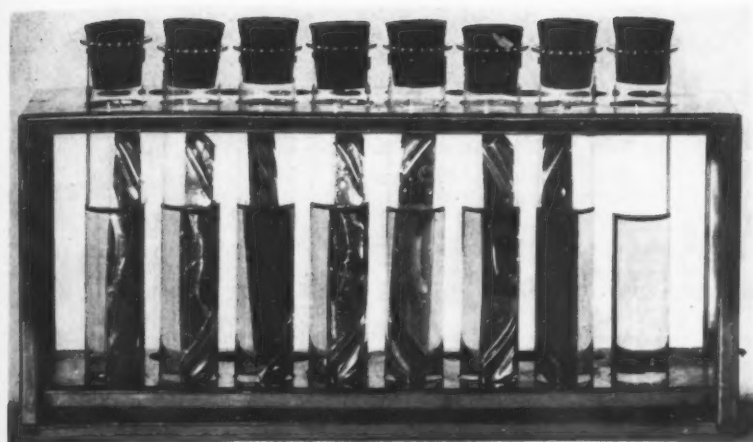
GLASS CONTAINERS move more household work-savers—polishes, bleaches, detergents, cleaners and chemical specialties—because they are chemically inert. They won't rust or corrode—inside or outside. Volatile contents do not evaporate and dry products will not absorb moisture in dependable glass packages. They afford a visual inventory, are easy and safe to open and convenient to use. And they reseal tightly to protect unused contents. Pack your chemical specialties in glass... in Anchorglass and seal them with efficient, dependable Anchor metal or molded closures.

**ANCHOR
HOCKING**



GLASS CORPORATION

Lancaster, Ohio



Container materials in a strip test.

testing of cap liners with volatile products already mentioned, the gross weights of the cans are taken. These are then compared with the earlier weights to determine if there has been any product loss. After examination of the exterior, the cans are opened and the product is examined. Product odor and appearance within the can, and during and after pouring from the can are observed; any differences between the appearance and odor of the product in the can and in reserve or test tube controls are then noted. In some cases, it may be desirable to obtain the product pH and possibly to analyze the product for compositional changes or metals picked up from the cans. Some of the product from the test cans may be actually used under normal conditions as a test that the product quality has been retained, and that no unusual changes have taken place during storage. This is best done by the product manufacturer who has greater experience in evaluation of his product.

The empty cans are inspected before they are rinsed to determine the location of any residue or coagulation in the interior. After this, the tops and bottoms are cut from the bodies and the bodies themselves are cut lengthwise and laid flat to expose all parts for the remainder of the examination. Any residual product is then washed off and the condition of the can interior is carefully noted. En-

ameled containers are examined first for proper adhesion of the coatings and for any enamel discoloration. Plain and enameled cans are examined both for pitting or other corrosion and for plate discoloration resulting from detinning or formation of colored or blackened compounds on the can walls. The seam areas are also examined minutely for corrosion. A low-power binocular microscope helps considerably in the seam examinations.

Oblong cans require the examination of screw necks, caps and the cap liners, and doubletite containers require the examination of the drawn rings and plugs.

Strip Tests

When a preliminary test procedure is desired, it is sometimes advantageous to conduct so-called "strip tests." These tests involve strips of plain or enameled plate cut from sheet plate, or container parts, which are immersed in test tubes or jars containing the product. The tubes are sealed and placed in storage pending scheduled examinations.

These tests require very little product and, in cases where the technician cannot predict the reaction of the product on container parts, serve as a procedure for screening out some of the can materials for later container tests. However, strip tests do not always indicate the actual performance of

a container made from the same materials when the container is subjected to commercial conditions. Therefore, strip test results should not be the sole basis upon which the choice of a container is made. To ascertain definitely what component materials will be most satisfactory, a container test should be conducted using strip tests only to assist in choosing test containers and to supply supplementary data.

Conclusion

The test procedures discussed can lead to a large quantity of data in which one may easily become lost. It is best to remember first the object of the program, which is usually to determine the most economical adequate container for the product. The performance of each portion of each variable should be considered in comparison with the other variables. Part by part, the adequate container evolves from the data by choice and specification. Plate, enamel, cap liner, style of container and sealing compound are each studied in turn and reduced to specifications. The product can then be marketed with assurance that the container being used is the most suitable for the purpose.

—★—

New Type Container Board

Commercial production of a new foamed styrene plastic and paper "sandwich" material for packaging was begun recently by Monsanto Chemical Co., St. Louis, and St. Regis Paper Co., New York. The two concerns plan to convert the new material into containers at the Mt. Wolf, Pa., plant of Superior Paper Products Co., a St. Regis subsidiary.

The proposed container is said to be waterproof, light in weight and strong enough to withstand long distance shipping under the high humidity conditions of refrigerator cars or trucks. It is expected to compete in strength and economy with wooden and solid fiber board containers.

4 STAR SERVICE

makes Continental Steel Containers your best buy



ICC-APPROVED TIGHT-HEAD PAILS

Capacity 5 gallons. Made from heavy 24- or 26-gauge steel. Meets ICC specifications 17E and 37D. High-strength body available with straight sides or top and bottom beads. Drum top offset for easy stacking. Electric lap-weld side seam, and compound-lined, double-seamed head and bottom.

For full specifications on all Continental steel containers, contact your nearest Continental representative.

When you purchase steel containers, get the most for your money. This means the best in *service* as well as the best in pails and utility cans. At Continental, we go all out to give you what you're looking for—with our 4-star steel container service.

★ FULL LINE

Whatever product you're buying for, Continental has just the size and style container to fit it. Handi-Cans in 2½ and 5 gal. sizes, lug cover pails from 2 to 12 gal., flaring pails from 3½ to 6½ gal., plus 5 and 6 gal. tight-head pails.

★ QUALITY

Made of heavy-gauge steel in ultra-modern plants, Continental steel containers are thoroughly tested to meet ICC specifications and to conform to CFC/UFC Rule 40. Colorfully lithographed, these sturdy, reusable containers will continue to promote your product long after their original contents have been emptied.

★ RESEARCH

As part of our 4-star service, customer research men are available to help you right in your own plant. In addition, scientists at our Research and Development Center in Chicago are constantly working to bring you new and better packaging ideas—such as Continental's Perma-Linings for hard-to-hold products.

★ QUICK DELIVERY

Just say the word and we'll deliver all the steel containers you can use—any time, any place. Continental's excellent production facilities and carefully selected warehouse points in many sections of the country guarantee better service when and where you need it. So get full value from your purchasing dollar—with Continental's 4-star steel container service. Call anytime.

**CONTINENTAL
CAN COMPANY**

Eastern Division: 100 E. 42nd St., New York 17
Central Division: 135 So. La Salle St., Chicago 3
Pacific Division: Russ Building, San Francisco 4

Packaging NOTES

26th Packaging Show in Chicago, April 8-11

NEW developments in all phases of packaging will be highlighted at the 26th annual National Packaging Exposition and Conference, to be held at the International Amphitheatre, Chicago, Apr. 8-11. The conference portion of the show, which is sponsored by the American Management Association, will take place at Palmer House, Apr. 8-10. More than 375 exhibitors will be represented at the exposition to show equipment, materials, methods and services. The conference will feature talks on virtually every phase of packaging by experts in their fields of discussion.

Judging from advance registrations, a record attendance of more than 30,000 is anticipated. Last year the show, held at Convention Hall, Atlantic City, N. J., had an attendance of over 28,000. A similar attendance figure was reported for the last packaging show held in Chicago in 1955. Three acres of exhibits are planned in the amphitheatre, making this event one of the nation's largest trade shows. Included among the exhibits, according to the AMA, will be all types of materials and equipment and materials for packaging — from basic material to finished container.

The three-day AMA Conference will explore packaging on a broad front, emphasizing throughout the problems encountered in industrial packaging. More than 1,000 specialists in packaging, packing, shipping, traffic management, materials handling and merchandising are expected to attend the sessions. Specific topics to be discussed include organizational structure for packaging, coordination with other functions in the company, characteristics and applications of packaging materials and trends in packaging machinery.

The opening morning ses-

sion will be devoted to a study of packaging's role in today's consumer markets. Speakers from a nationally known research company will discuss current trends in packaging, including point of sales displays, distribution and other marketing devices.

Another morning meeting will deal with a panel discussion of modern packaging techniques at H. J. Heinz Co., Pittsburgh. The panel, consisting of four Heinz executives, will cover the history of packaging at the company, divisional organization, quality control, package development, packaging research and packaging design.

The industrial side of packaging will be covered by five representatives of the Bendix Aviation Corp., South Bend, Ind. They will form a panel and discuss the company's packaging organizational set-up, its operation at both staff and line levels and the responsibilities of packaging engineers.

On the following morning a six man panel from Forest Products Laboratories, U.S. Dept. of Agriculture, Madison, Wisc., will discuss package design and testing procedures for pallets, crates, and fibre and corrugated cases. The panel will also cover the development of design and the use of fibre-board in shipping containers.

To permit attendance at both exposition and conference, the latter will hold sessions only in the mornings. The conference will open at 9:30 a.m. on Apr. 8, and 9:00 a.m. on the two succeeding days. They will close about noon. Meetings will be held in the grand ballroom of the hotel, with concurrent sessions in other rooms.

Hours of the show are as follows: Monday, Apr. 8, 10:00 a.m. to 6:00 p.m.; Tuesday, Apr. 9, 10:00 a.m. to 9:00 p.m.; Wednesday, Apr. 10, 10:00 a.m. to 6:00 p.m.; and

Thursday, Apr. 11, 10:00 a.m. to 3:00 p.m.

Information about conference registration may be obtained from the Packaging Division, American Management Association, 1515 Broadway, New York 36. Tickets for the exposition, for which there is no charge, may be obtained in advance from the AMA, any exhibiting companies or from the exposition management, Clapp & Poliak, 341 Madison Ave., New York 17. During the show tickets will be available in the registration area. Hotel reservations may be made through the Packaging Exposition Housing Bureau, 134 North LaSalle St., Chicago 2.

A partial list of the exhibitors follows:

American Can Co., New York; Armour and Co., Chicago; Bradley Container Corp., Maynard, Mass.; Continental Can Co., New York; Crown Cork & Seal, Inc., Baltimore; Crown Zellerbach Corp., San Francisco; Dow Chemical Co., Midland, Mich.; E. I. du Pont de Nemours & Co., Wilmington, Del.; Eastman Chemical Products, Inc., Kingsport, Tenn.; Robert Gair Co., New York; General Chemical Division of Allied Chemical & Dye Corp., New York; Hazel-Atlas Glass Co., Wheeling, W. Va.; Inland Container Corp., Chicago; Karl Kiefer Machine Co., Cincinnati; MRM Machine Co., Brooklyn, N. Y.; Mojonier Associates, Inc., Franklin Park, Ill.; National Can Corp., Chicago; National Container Corp., New York; Olin Mathieson Chemical Corp., Baltimore; Owens-Illinois Glass Co., Toledo; Pfaunder Co., Rochester, N. Y.; Sun Chemical Corp., Long Island City, N. Y.; and U.S. Bottlers Machinery Co., Chicago.

★

Henschel in New Post

Appointment of George F. Henschel as vice-president and general manager of sales of National

George F. Henschel



HOW YOU CAN
PACKAGE
FOR PROFIT
IN 1957

Highlights from new Du Pont Survey

*show how growth aerosols point the way
to volume sales of personal products.*

IN 1955 four products accounted for about 80% of total aerosol sales. To find out why many other aerosol product types have never caught on, Du Pont asked the housewife. The answers she gave tell a story of opportunity and huge sales potential for aerosols.

In the personal-products field, seven products were studied which show large total sales in all forms of packaging. These products were colognes, personal deodorants, home permanents, hair lacquers, hair tints, hair dressings and conditioners and sun-tan lotions. Only one of these—hair lacquers—has shown appreciable sales growth in aerosol form.

Survey returns show when the housewife tries an aerosol, she expresses an overwhelming preference for it. The big factor holding back the sale of many personal products in aerosol form is a lack of *consumer awareness*. Imagine the big-volume, big-profit sales, when you capitalize on high consumer satisfaction with aerosols. Why not take advantage of this potential and promote aerosols?



Custom fillers have specialized equipment and experience to help you manufacture your aerosol. They can help with product evaluation, formulation, testing, container selection and labeling, filling, packing and shipping. Write Du Pont for names of qualified fillers near you.



Du Pont can supply the right "Freon"[™] propellant for your aerosol product

Propellant requirements of your aerosol product for pressure, solubility, stability and particle size are sure to be met by one of the over 25 "Freon" propellant solutions available from Du Pont. "Freon" propellants are nonflammable, nontoxic, noncorrosive and uniformly high in quality. They are backed by more than 26 years of Du Pont's manufacturing leadership and the industry's most comprehensive technical and marketing services. For more information or assistance write to E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Division 233, Wilmington 98, Delaware.

"Freon" is Du Pont's registered trademark
for its fluorinated hydrocarbon propellants.



BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

FREON *propellants*

Microscopic examination for
structure of plastic components after
exposure to aerosol formulation



IMITATED...BUT NEVER DUPLICATED-

THE

Precision Valve

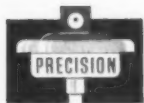
From planning to commercial production, a new aerosol product requires infinite knowledge, effort and research. Almost every phase of human endeavor contributes its share to the completed product.

The final use, however, is dependent upon the proper valve, which is carefully designed, engineered, and manufactured to produce the proper dispersion of spray, mist or foam.

We at Precision are ready to help you, whether it be formula, package design, or production. Our facilities can be our contribution to the success of your business.

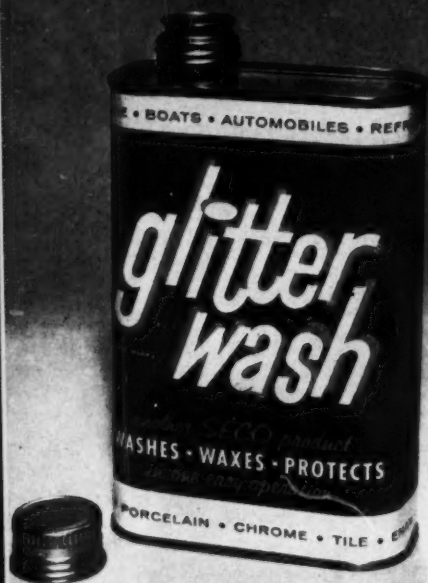
Whether it be a million and ten or just ten... Precision has or will develop the aerosol valve for your product. Our large quality control department assures you of the finest results along with the economy required for profitable sales.

Known throughout the World



Precision Valve Corporation

700 NEPPERHAN AVENUE • YONKERS 3, NEW YORK



"Glitter Wash," top, left, a new liquid cleaner that washes, waxes and protects in one operation, is now being marketed by Seco Chemicals, Inc., Detroit. It may be used for automobiles, kitchen appliances and all painted, plastic, porcelain or metal surfaces. Compounded of a neutral detergent and carnauba wax, the product is packed in a 16-ounce, oblong, seamed-top lithographed can of American Can Co. "Glitter Wash" retails for \$1.49 a can, and will be available April 1 through automotive distributors and jobbers.

Combination (top, right) of "Kings Men" aerosol shave and after-shave lotion is a new promotion of Lenthetic. A six-ounce container of the aerosol shave, that usually retails for \$1.00, is teamed up with a one and three-quarters ounce bottle of after shave lotion, having a retail value of 75 cents. Unit available for \$1.00 for a limited time.



Newly adopted package for "Soilax" household cleaner of Economics Laboratory, Inc., St. Paul, emphasizes floors instead of walls and woodwork as did the former package design. The red and yellow checkerboard pattern on a white background with bright blue accents, suggests the "soiled-floor to clean-floor" idea. To provide quick identification, no matter how the package is stacked, the trade name is repeated in red on all sides of the box. It also features an aluminum pour spout.

Complete redesign of containers for "N-L Concentrate," a liquid all-purpose cleaner, was announced late last month by National Laboratories, Inc., Toledo. Everything from the five gallon pail to the 55 gallon drum has been changed and all containers are now part of the "N-L Concentrate" family of packages. All containers are attractively lithographed in three colors. The drums are said to be the first produced by a large steel drum maker by means of a new process which requires no side-seam touch-up. The aim of the new design is to retain the product's identity and at the same time create an ultra-modern package which would denote quality and add prestige to the product.



"Hello," a new disinfectant for use on telephones, was announced recently by James Good Co., Philadelphia. Packaged in a four-ounce glass bottle, the product comes with an atomizer type dispenser. Silver foil label is overprinted in red and black.

Combination shipper carton and point of sale display case is now being featured by Plasti-Kote, Inc., Cleveland, for its recently introduced aerosol type ignition spray.

What's New?

"GlossTex" double duty starch of Tidy House Products Co., Shenandoah, Ia., is now being distributed in glass containers having a built-in stacking feature designed for the convenience of retail stores. Flat top closure fits into recessed bottom of container to provide safe and easy stacking in store displays or for store shelf stacking purposes. Private mold quart jars are supplied by Owens-Illinois Glass Co., Toledo; Brockway, Glass Co., Brockway, Pa., and Ball Brothers Co., Muncie, Ind. Ball also supplies the lithographed metal closures. Wrap-around labels are by Muirson Label Co. "GlossTex" is distributed in 32 states.



New "Menthol Aero Shave," aerosol dispensed shave lather, was announced recently by Boyle-Midway, Inc., New York. Tinted pale green to give product a cool look and feel, it also contains lanolin. "Menthol Aero Shave" retails for 59 cents. A special introductory offer for dealers includes one free case of the product with every five cases ordered. Push-button can differs from the earlier "Aero-Shave" by being green and white instead of blue and white. Word "menthol" stands out boldly above product name. Heavy magazine and television advertising campaign backs the product.



Hysan Products Co., Chicago, has just announced its new "Can-I-San" liquid cleaner for porcelain and enamel. Product is designed to remove rust and stains from bathtubs, lavatories and other porcelain-enameled surfaces without injury. It can also be used on Monel and stainless steel. "Can-I-San" requires no poison label. It will be distributed through sanitary supply jobbers. The product has the approval of the American Hotel Association.



Can Corp., Chicago, it was announced recently by Robert S. Solinsky, president. Mr. Henschel formerly was general manager of sales of American Can Co., New York, a post to which he was appointed in June of 1954.

Mr. Henschel joined Canco in 1930 as an inspector in its Philadelphia plant. He transferred to sales in 1935 as an assistant in the Atlantic division office in New York.

Subsequently he served as a salesman in northern New Jersey, as assistant district sales manager in Rochester, N. Y., and as district manager in Philadelphia before his appointment in 1947 as commodity manager of non-food can sales in the Atlantic division. He was named assistant division manager of sales in 1950 and two years later was appointed head of the beer can division in the general sales department.

Crown Names Tuttas

Appointment of S. V. Tuttas as sales director of Crown Cork & Seal, Inc., Baltimore, was announced recently. In his new post, Mr. Tuttas will be responsible for direction of company-wide sales policies and coordination of sales activities of the firm's four divisions. Mr. Tuttas, who joined Crown in 1950, formerly was sales manager of the Crown and Closure division. He will be succeeded in that position by William R. Fox, who previously had been division field sales manager.

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Continental Advances Four

Four managerial changes in the Robert Gair Division of Continental Can Co., New York, were announced recently by Norman F. Greenway, Continental vice-president and general manager of box-board and folding carton operations. Harry J. Van Decker has been appointed assistant manager of manufacturing; Otto M. Miller has been named plant manager at Piermont, N. Y.; Robert C. Bullock, plant manager at Los Angeles; and James S. C. Belt, plant manager at Grand Rapids, Mich.

—★—

Brockway Appoints Two

Eugene M. Tyndall and William S. Borland have been named assistant general sales manager and sales manager of the prescription ware division, respectively, of Brockway Glass Co., Brockway, Pa., it was announced recently by

William S. Borland



On the Job...

Everywhere!

...with the best products



Quality made...

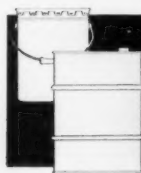
Dependable performance

SIZE and STYLE for your every need.

A complete line of Steel Pails and Drums — sizes 1 through 22 gallons, Open-Head and Closed-Head, all popular Pouring Openings; Proven-in-use Hi-Bake Interior Linings, full-color Lithographing. Ideal for Paints, Chemicals, Oils, Greases and Refractory Products; Foods, Inks, Putty.

Sales Offices and Warehouse Stocks in principal cities insure immediate delivery at all times (over 50,000 Pails and Drums carried in stock for your convenience).

Samples, prices and full details gladly furnished upon request.



VULCAN STEEL CONTAINER CO.

Main Office and Factory

3315 35th AVE., N. • P. O. BOX 786 • BIRMINGHAM, ALABAMA

James A. Giddings, president.

In his new assignment, Mr. Tyndall will be responsible for the firm's glass container operations. He formerly was sales manager of Brockway's beverage, liquor and prescription ware divisions. Mr. Borland, who will supervise the sales activities of the prescription ware division, previously had served as sales service assistant in the pharmaceutical-proprietary division.

Can Production Rises

Can production in the United States reached a record 39.4 billion containers during the first eleven months of 1956, according to a report recently issued by American Can Co., New York. This figure represents an increase of approximately 2.7 billion units over the similar period of 1955. A major factor in the increase was the rise in the use of cans for pet foods, meats, fruits and vegetables, coffee and beer.

Whitney Relocates

L. A. Whitney Co., manufacturers representatives of packaging and processing equipment in the New England states, have moved to new and enlarged quarters at 50 Kearney Rd., Needham, Mass., it was announced recently.

At the same time, the company also announced the appointment of William A. White, Jr., to its sales engineering staff. Mr. White formerly served as chief engineer of Rexall Drug Co., Boston.

William A. White, Jr.



MARCH, 1957

Bracon ... SQUEEZE-TO-USE PACKAGING



Where's this been all my life?

Here's a new and easier way for that morning shave. E. R. Squibb and Sons have found it by packing their Brushless Shave Cream in BRACON squeeze-to-use tubes.

Squeezing shave cream from a pliable, pleasant to handle, plastic tube makes all the difference to a man's early morning outlook. Squeeze *anywhere* ... and just the right amount comes out the front end ... no rolling — folding — cracks or leaks. Travel ... and this dentproof, compact container packs easily into toilet kit. Clean cut, permanent printing reminds the user of brand name through the last shave.

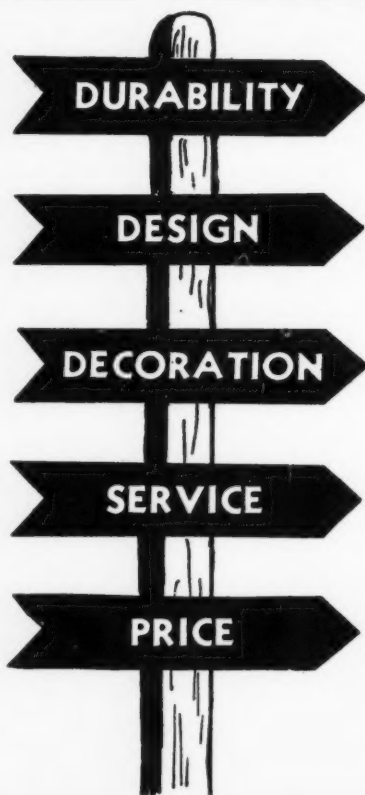
Why hasn't someone done this before? Because BRACON's internal coating for polyethylene tubes is a very new development. These revolutionary containers prolong shelf life, improve stability, and bring the advantages of squeeze-to-use packaging to many other drug, cosmetic and food products.

It will pay you to learn all about economical BRACON squeeze-to-use tubes, bottles or cans. Let us tell you more.



BRADLEY CONTAINER CORPORATION

Maynard, Mass. — New York, Chicago, Los Angeles, Toronto



Eastern's superior workmanship guarantees strong, durable containers that will take your product safely to market.

Eastern's experts can be of major assistance in designing packages that win sales success.

Eastern is noted for top-quality lithography on every shipment.

No costly interruptions with Eastern's service — shipments arrive when and where you specify.

Eastern's advantages available at competitive prices because of our modern plant and long experience.

All Signs Point to EASTERN for Distinctive PACKAGING

Start on the road to a distinctive package for your waxes, cleaners, polishes and other specialties by calling in Eastern. Plain or lithographed — a package by Eastern guarantees satisfaction for both you and the consumer.

Further details available without obligation

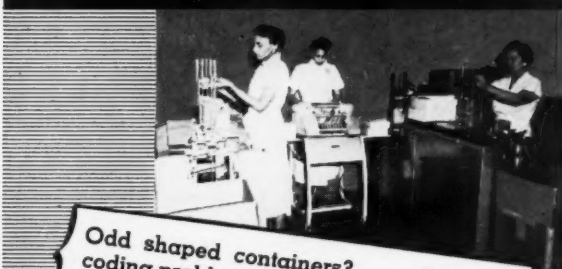


EASTERN CAN CO., INC.

31 Keap St., Brooklyn 11, N. Y.

ULster 5-0100

Packaging Problems?



Odd shaped containers? . . . Difficult coding problems? . . . Orders to be filled yesterday? Let us "take over" your Production Department. Our expert staff of chemists and engineers are at your service.

Old Empire



MANUFACTURING CHEMISTS

Mt. Prospect & Verona Aves., Newark 4, N. J.
HUmboldt 4-2121 N.Y.C. WOrth 4-7870

To illustrate the simplicity of filling aerosols, Mojonnier will fill 15 thousand of the new nylon bottles with aerosol cologne on a "700" series

electromatic
filling
line

DON'T
MISS

BOOTH
876

mojonnier

ASSOCIATES
DISPLAY

26th National
Packaging
Exposition
International
Amphitheatre
Chicago
April
8-11

BE
SURE
TO SEE

•
OPERATING
AEROSOL LINE

•
AUTOMATIC WEIGHT
CHECK CONTROL

•
HIGH SPEED ROTARY FILLER

mojonnier associates inc.

9151 Fullerton Avenue • Franklin Park, Illinois

NEW Trade Marks

THE following trade marks were published in recent issues of the *Official Gazette* of the U. S. Patent Office in compliance with section 12(a) of the Trade Mark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the *Gazette*. See rules 20.1 to 20.5. As provided by section 31 of the Act, a fee of \$25 must accompany notice of opposition.

"Dyp"—This for water-soluble antistatic rinse for garments made of super-polymeric amides of protein like structure and acrylonitrile polymer. Filed March 5, 1956 by Davies-Young Soap Co., Dayton, O. Claims use since Feb. 29, 1956.

Peerless—This for floor sweeping compound. Filed Oct. 6, 1954 by J. W. Kelso Jr., doing business as Peerless Manufacturing Co., Des Moines, Ia. Claims use since June 15, 1934.

SSS-T!—This for steam iron cleaner concentrate. Filed July 9, 1956 by Fast Chemical Products Corp., Jackson Heights, N.Y. Claims use since April 1954.

Malcap—This for insecticide and fungicide. Filed May 16, 1955 by Parrott Chemical Co., Stamford, Conn. Claims use since Feb. 25, 1955.

Foam-O-Cel—This for cellulosic sponges impregnated with shampoo for rugs, carpets, and upholstery fabrics. Filed Dec. 16, 1955 by M & M Specialties, Inc., New York. Claims use since July 15, 1955.

The Maid in a Bottle—This for detergent for dishes, floor cleaner, household cleaner and rug cleaner. Filed Jan. 3, 1956 by Texize Chemicals, Inc., Greenville, S.C. Claims use since Jan. 1947 on household cleaner.

Topco—This for household detergents. Filed Feb. 10, 1956 by Topco Associates, Inc., Chicago. Claims use since Jan. 26, 1956.

Nami-Lo—This for general purpose detergent for laundry, household, institutional, and industrial use. Filed May 28, 1956 by National Milling and Chemical Co., Philadelphia. Claims use since Oct. 6, 1955.

66—This for glass and metal cleaner, pre-wax cleaner, soluble powder type radiator cleaner, and liquid acid type radiator flush. Filed 25, 1956 by Phillips Petroleum Co., Bartlesville, Okla. Claims use since July 28, 1933.

Step Ahead—This for shampoo. Filed July 13, 1956 by Richard Hudson, New York. Claims use since June 29, 1956.

Eaton—This for antibacterial, antiseptic, and antimicrobial preparations for medicinal use. Filed May 31, 1956 by Norwich Pharmacal Co., doing business as Eaton Laboratories, Norwich, N. Y. Claims use since July 15, 1954, on antibacterial preparations.

Sterifome—This for surgical soap. Filed July 23, 1956 by DeMert & Dougherty Inc., Chicago. Claims use since on or about April 13, 1956.

Seven Winds—This for soap. Filed July 25, 1956 by Richard Hudson, New York. Claims use since July 20, 1956.

Quat-O-Brite—This for soluble detergents containing quaternary ammonium compounds and used as cleaners, sanitizers, deodorants, and/or disinfectants. Filed July 30, 1956 by Britex Corp., Boston, Mass. Claims use since May 15, 1956.

Kay-Wax—This for liquid wax for polishing, finishing, and coating floors of wood, linoleum, rubber tile, terrazzo, and other types of surfaces. Filed Jan. 30, 1956 by S. C. Jonsson & Son, Inc., Racine, Wis. Claims use since on or before Jan. 1, 1933.

Spec Wick—This for liquid cleaner and polish for eyeglass lens and frame. Filed July 11, 1956 by Spec-Wick, Moultrie, Ga. Claims use since April 19, 1956.

Trooper—This for rinseless shampoo. Filed Jan. 30, 1956 by Jean Jordeau, Inc., South Orange, N. J. Claims use since Jan. 16, 1956.

Penray—This for automotive specialties. Filed April 18, 1956 by Penray Co., Chicago. Claims use since June 26, 1950.

Bluinite—This for brightening agent for use in detergents. Filed May 21, 1956 by Procter & Gamble Co., Cincinnati. Claims use since April 11, 1956.

Zen—This for liquid stain remover for toilet bowls and urinals. Filed May 24, 1956 by J. I. Holcomb Manufacturing Co., Indianapolis. Claims use since July 8, 1955.

Kleen-O—This for engine and carburetor cleaner. Filed May 28, 1956 by Kleen-O-Products, Inc., Beverly Hills, Calif. Claims use since on or about March 19, 1956.

Foam Off—This for plastic wall tile cleaner. Filed Aug. 6, 1956 by Ralph H. Wycoff, doing business as Wycoff Sales Co., Columbus, O. Claims use since Jan. 20, 1956.

Santa Celesta—This for toilet soaps. Filed Aug. 7, 1956 by Angier Chemical Co., Boston, Mass. Claims use since Nov. 3, 1955.

Sly—This for chemical cleaning compounds. Filed Aug. 10, 1956 by Acorn Adhesives Co., Los Angeles, Calif. Claims use since July 26, 1956.

Alumalub—This for liquid cleaner and lubricating compound for aluminum windows, screens, etc. Filed Aug. 13, 1956 by Harry E. Schneiders, doing business as Alumalub Co., St. Louis, Mo. Claims use since April 10, 1954.

Ask—This for abrasive solvent cleaner. Filed Aug. 20, 1956 by Maywood Co., Cicero, Ill. Claims use since June 29, 1956.

Industrial Perfuming Series

A new series of monthly articles, designed to outline and define industrial perfuming and basic

cosmetic applications, was announced recently by Dodge & Olcott, Inc., New York. Entitled, "The Fragrant Life," the series began in the February issue of the company publication, *D&O News*. The first article, which appears in two installments, describes aromatics in the automobile industry. Future articles will include information on masking and reodorizing in the insecticide, pesticide, plastics, paint and paper fields. Copies of the *D&O News* may be obtained from the company, 180 Varick St., New York 14.

New Penetone Solvent

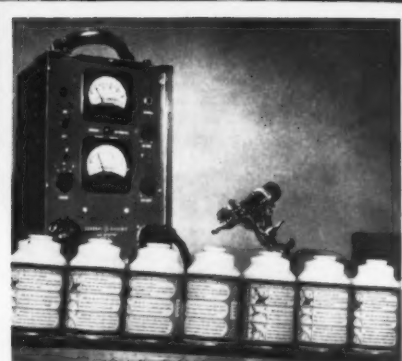
A new solvent, designed for cleaning metal parts, machinery and many other types of industrial equipment, has been introduced by Penetone Co., Tenaally, N. J., it was announced recently. Called "Antiox-Type-R," the new product is claimed to degrease, and at the same time, deposit a colorless, dry and non-toxic protective coating. In addition, the solvent is said to contain a non-toxic corrosion inhibitor. Further information may be obtained from the company, 74 Hudson Ave., Tenaally, N. J.

New Phila. Quartz Booklet

A new booklet describing applications of potassium silicates was issued recently by Philadelphia Quartz Co., Philadelphia. The seven-page, two-color brochure is fully illustrated and also contains the physical and chemical properties of the product. Additional product data is provided through the use of charts and graphs. Copies of the bulletin can be obtained on request to the company, 1158 Public Ledger Building.

Canadian Customs Change

The Department of National Revenue of Canada, recently announced several changes in its customs marking regulations. One new requirement is that all lithographed or printed metal screw caps, lug caps or vacuum caps shall have the country of origin printed on the outer surface.



New General Electric leak detector checks each can quickly, automatically, safely

HELPS ASSURE LONG SHELF LIFE, IMPROVES QUALITY CONTROL

Continuous production line testing of pressurized cans is now possible with General Electric's new "fixed-head" leak detector. Designed for use by manufacturers of insecticides, hair lacquers, plastic sprays, shave lathers, shampoos, etc., the new unit accurately leak-checks every can on the line. This 100% leak test helps protect product quality. Complaints and returns caused by deterioration on dealer's shelves can be sizeably reduced.

Automatic rejection of faulty cans can be initiated by the new system. Manual testing of cans is eliminated and this new method is more sensitive and much faster than conventional "hot-water" methods.

Tolerance limits for quality control can be set and maintained through use of General Electric's new "leak-standard." Experience with your product will show the size leak which is permissible to maintain product

quality for the desired period of time. The "leak-standard" makes possible quantitative measurement of the leak and proper calibration of the detector to predetermined limits for precise quality control.

For further information about how to apply this new leak detection system, call your nearest General Electric Apparatus Sales Office or write to Section 585-56A, General Electric Company, Schenectady 5, N. Y.

ACCURATE LEAK DETECTION MEANS PROFITS

GENERAL  ELECTRIC

PRESSURE PACKAGING

Carbide & Carbon to Make Propellants

PLANs to enter the fluorocarbons field and market aerosol propellants were announced late last month by Carbide and Carbon Chemicals Co., New York, a division of Union Carbide and Carbon Corp. According to D. B. Benedict, Carbide president, the company will build a fluorocarbons plant at the site of its Institute, W. Va., unit. The new plant is expected to be in operation by the latter half of 1958 and will produce 50 million pounds of fluorocarbons per year.

The fluorocarbons will be marketed as propellants for aerosols and refrigerants. A sales organization, under the direction of John A. Field, Carbide vice-president, is now being formed to serve these industries. It will be backed up by a customer service laboratory group to advise on formulations and engineering problems.

Mr. Field stated that the company's long experience in handling compressed and liquefied gases will place the fluorocarbons in a favorable marketing position. He added that the parent company already has an established distribution network set up which handles similar gaseous products. It consists of 120 bulk stations and more than 1,000 warehouses located throughout the country and will provide prompt delivery to users of fluorocarbons, according to Mr. Field.

Discussing the firm's entry into the new field, Mr. Benedict said, "the market for fluorocarbons as pressuring components for aerosols and as refrigerants has grown amazingly in the last 12 years. With Carbide's planned unit the total U.S. capacity will exceed 300 million pounds per year. Production and sales of fluorocarbons is our first commercial venture into the

field of fluorine chemistry. However, our research teams are working vigorously to provide new fluorine chemicals to meet industry's stringent requirements for new materials." He added that other possible fluorine chemicals could lead to new types of lubricants, agricultural chemicals, and surface active agents.

Precision Wins Suit

A damage suit filed by Acrolite Products, Inc., West Orange, N. J., against Precision Valve Corp., Yonkers, N. Y., was settled recently by a judgment in favor of Precision of "no cause of action." The suit was filed by Acrolite because of alleged damages incurred by the use of alleged defective valves manufactured by Precision.

New Refrigeration Units

Mojonnier Associates, Inc., Franklin Park, Ill., recently introduced a new line of "package" refrigeration systems which can be set up in plant or factory within two days after delivery. The units, which employ a new concept of

flooded system refrigeration utilizing a fluorinated hydrocarbon refrigerant, are available in capacities ranging from one to 20 tons. Units are designed to cool both product and propellant either individually or in a single cooler. Complete information may be obtained from the company, 9151 Fullerton Ave., Franklin Park, Ill.

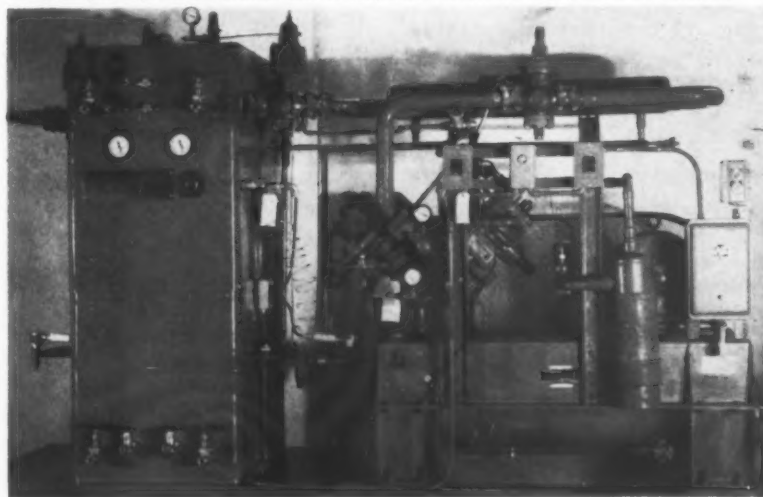
Aerosol Research Expands

Aerosol Research Co., Forest Park, Ill., recently announced the opening of a New York sales office at 550 Fifth Ave., New York 36. The new branch will be under the direction of Jack R. Schlossman, eastern sales manager.

Reed Research Moves

Reed Research Corp. is the new name adopted by the former Aerosol Process Co., Bridgeport, Conn., pressure packaging consultants. On February 27 the concern moved to Huntington, Shelton, Conn., it was announced by Winston H. Reed, president. Located in new quarters on Mill Street, just off Route 8, the firm is equipped to perform basic research, new product and formula development, and all types of tests including particle size determination. In addition, consulting services pertaining to plant layout and machinery for pressure packaging are being offered, according to Dr. Reed's announcement.

New "package" refrigeration unit of Mojonnier Associates, Inc., Franklin Park, Ill.



New Aerosol Products Featured at New York Auto Accessories Show

THE progressive development of aerosol dispensed products in the chemical specialties field was emphasized at the 30th annual National Auto Accessories Exposition, held at the New York Coliseum, Feb. 4-7. More than 500 firms, many of them manufacturers of specialty products related to the automotive industry, utilized over 800 booths to display their wares. Although some of the products displayed had been on the market from one to three years, a number of new products were featured, especially of the pressure packaged variety.

A consensus of exhibitors indicated that buyers attending the show expressed a vigorous interest in all aerosol products. Similarly, distributors disclosed that many new aerosol specialties can be expected in the near future.

Elias Shapiro, vice-president of Plasti-Kote, Inc., Cleveland, whose firm displayed one of the most complete lines of aerosol specialties at the exposition, said that automotive wholesalers throughout the country are enjoying a harvest of new business because of the enthusiastic reception of aerosol products. He added, "that aerosol pressure products are having a great influence in 1957 on the buying habits of consumers and can be likened to the early days of the automobile which introduced a new way of life for Americans."

The Plasti-Kote exhibit was highlighted by the firm's new line of 16.4 ounce aerosol containers. The can features a protective cap, matching the product's color, and a detachable metal spray head, which is claimed to prevent clogging. At present, products packaged in the new containers include a new, non-toxic fire extinguisher, a clear acrylic plastic spray, and the company's complete line of lacquers and enamels. Also dis-

played at the Plasti-Kote exhibit were aerosol ignition sprays, insecticides, auto foam cleaners, Christmas snow, degreasers and motor cleaners, rust solvents and penetrants, rug and upholstery cleaners, room deodorants and dog sprays. Most of these products were featured in point of sale displays of various sizes.

H. Talbot Co., Cincinnati, displayed its new "Fabric Color," a dressing designed to refinish upholstery, auto convertible tops, rugs, fabric, shoes and purses. The product, which was exhibited in a shipper-display carton, comes in

14 colors and is packaged in a 15½ ounce aerosol container.

Another dressing new to the market was shown by Glidden Co., Cleveland. Called "Top Dressing," the product is designed for use on convertible automobile tops. It is said to be water repellent and will not chip or crack when top is folded. "Top Dressing" is available in black, gray, tan and clear and is packaged in a 16.2 ounce aerosol container.

At the booth of Faspray Aerosol Co., Indianapolis, a new line of 16.4 ounce aerosol containers, similar to those of Plasti-Kote, were on display. The company featured lacquers, enamels, metallic coatings and paint and varnish removers in the new cans.

Another new aerosol of particular interest to manufacturers

Exhibit of Plasti-Kote, Inc., Cleveland, at recent National Auto Accessories Exposition, held last month in New York, features complete line of aerosol products with an automotive angle. Lower photo shows Ed Planas, trade sales manager and Elias Shapiro, vice-president of Plasti-Kote, discussing new Rust Solvent aerosol.



of chemical specialties is "Jet Cleaner," an all purpose cleaner which was on display at the booth of Lyk-Nu Products Co., New York. The product is designed for use on walls, enamel, tile, windows, woodwork, chrome and stoves. It comes in a 15 ounce push button container.

Choldun Manufacturing Corp., New Haven, Conn., exhibited a new leather and plastic cleaner called "Leather Magic." Said to clean, soften and protect all leather and plastics, the product comes in a 10 ounce aerosol container.

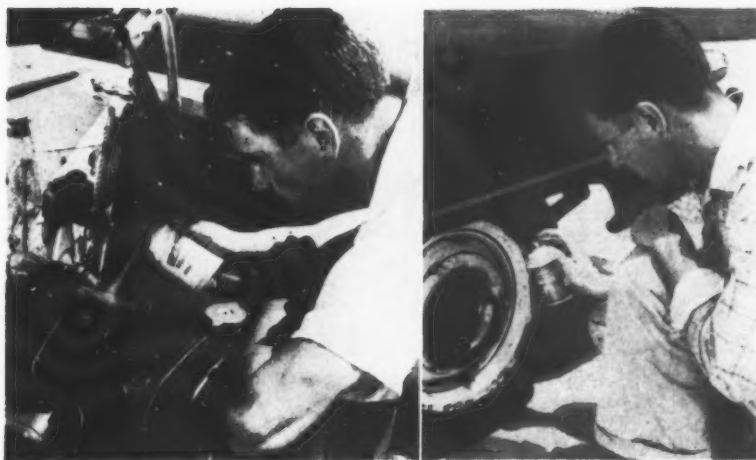
Among other well-known exhibitors of maintenance equipment, cleaning compounds and related specialties were E. I. du Pont de Nemours & Co., Wilmington, Del.; Laitner Brush Co., Detroit; Simoniz Co., Chicago; John T. Stanley, Inc., New York; and Richman Chemical Products Co., Chicago.

Sponsors of the show, the Automotive Accessories Manufacturers of America, announced that the 1958 exposition will be held at the Navy Pier, Chicago. Dates will be announced in the near future.

Conn. Chem. Names Rader

Charles O. Rader has been named sales manager of the contract packaging division of Connecticut Chemical Research Corp., Bridgeport, Conn., it was announced recently by A. O. Samuels, president. Mr. Rader formerly was sales man-

Charles O. Rader



New Plastic-Kote aerosols shown at Auto Accessories Show include engine degreaser, left, and self-spray touch-up enamels and lacquers right. Both products retail for \$1.69.

ager of Bostwick Laboratories, Inc., and of the Aer-a-sol division of Bridgeport Brass Co. Both companies are located in Bridgeport.

Prior to joining Bridgeport Brass in 1948, Mr. Rader served for two years as commercial sales promotion manager of Koppers Co., Pittsburgh. He previously had been with Lever Brothers Co., New York, as division sales manager and assistant division sales manager in Pittsburgh. He had been associated with the sales organization of Lever since 1933.

New Mojonnier Crimper

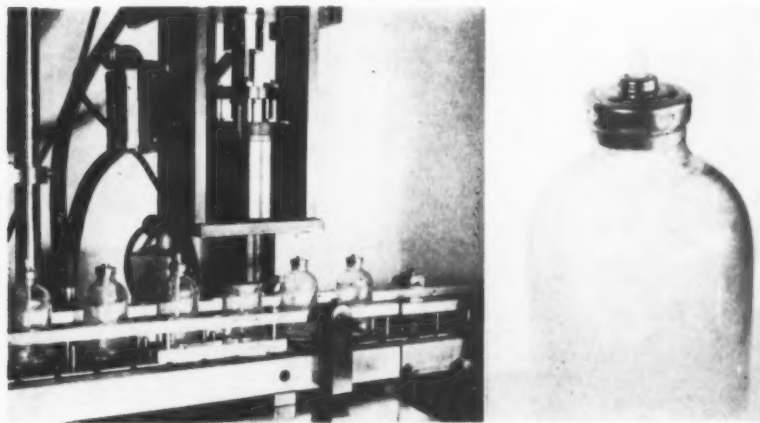
Mojonnier Associates, Inc., Franklin Park, Ill., recently announced development of a new high-speed glass bottle crimper. According to the announcement, the new machine can crimp glass aerosols at speeds of up to 60 units

Bridgeport Sales Drop

Sales and earnings of Bridgeport Brass Co., Bridgeport, Conn., declined in 1956, it was announced recently by Herman V. Steinkraus, president and board chairman. Net income in the twelve months ended Dec. 31 totaled \$163,272,817, as compared with \$172,996,392, in the previous year. Net income in 1956 amounted to \$4,659,821, equal to share earnings of \$2.80. This compared with net income of \$6,649,495, equal to share earnings of \$4.25, in 1955.

per minute. The crimper will be featured on the Mojonnier aerosol line at the National Packaging Exposition and Conference to be held next month in Chicago. Additional information may be obtained from the company, 9151 Fullerton Ave., Franklin Park, Ill.

New Mojonnier high speed glass aerosol bottle crimper. Close-up, at right, shows glass aerosol bottle on which cap has been crimped using the new unit.



Which of Continental's five "poly" nozzle, non-drip cans is designed for your liquid detergent?

Take a good look at Continental's exclusive line of five Fluid Flow cans—and you'll find a container that's made-to-order for your liquid detergent. Every one of these rugged containers gives you all these big selling features:

EVEN POURING, NO DRIPPING—Threaded polyethylene nozzle permits free flow . . . provides exact, dripless cutoff when pour is completed.

WRAP AROUND LITHOGRAPHY—Solderless construction frees every square inch of outside surface for colorful decoration—even domes and tops.

LASTING BEAUTY—Resistant varnish prevents marring of lithography . . . protects your sales message from the time it leaves your plant until it's in the hands of the consumer.

TOP PRODUCT PROTECTION—Newly-developed enamel linings prevent raw metal from touching your liquid detergent.

Put Continental's full line of Fluid Flow cans to work for you. Call soon.



Eastern Division: 100 E. 42nd St., New York 17
Central Division: 135 So. La Salle St., Chicago 3
Pacific Division: Russ Building, San Francisco 4



OF INTEREST TO MAKERS OF LIQUID WAX, STARCH AND OTHER PRODUCTS

After extensive tests at Continental's Research and Development Center, Fluid Flow cans—originally developed for liquid detergents—are now available for a number of other products. Some of these include:

Liquid Wax (water base)	Liquid Soaps	Liquid Starch
Liquid Car Wash	Liquid polish (water base)	
Water Base Cleaners	Liquid Rug and Upholstery Cleaners	

For more information on how Fluid Flow cans can benefit your product, call your nearest Continental representative.



Production...

EQUIPMENT • MATERIALS • PROCESSING

Production Clinic

Soap Plant Observer

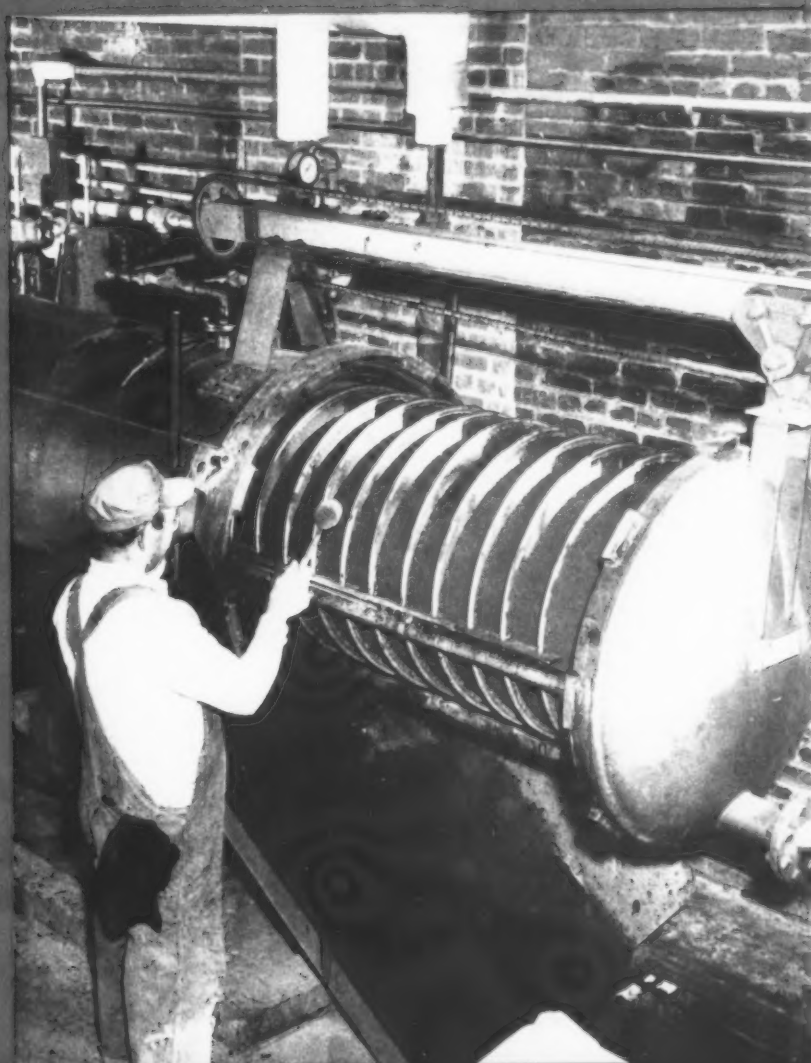
Products and Processes

New Patents

Book Reviews

Bulletins and Equipment

Typical installation of a horizontal tank pressure leaf filter for filtration of natural waxes and emulsions. Article, "Optimum Performance of Wax Filters," by T. M. Jackson, Jr., Celite Division of Johns-Manville Products Corp. . . . page 143.





HIGH VISCOSITY *or* LOW VISCOSITY STOCKS ?

New **HOUCHIN CRUTCHER** *Mixes Broad Range*

The new Houchin Crutcher is designed with the power and husky construction to mix thick soap stocks and high viscosity chemicals. Equipped with a variable speed drive, infinitely adjustable between 23.3 and 93.0 R.P.M. while the mixer is in operation, its impeller speed can be matched to the changing viscosity of the mix.

Efficiency through the broad viscosity range is effected by the advanced design draft tube. This draft tube is adjustable to permit mixing of varied sized batches, from one third to full 1400 gallon tank capacities (capacities vary with model).

Ejection of charge and cleaning of bottom is accomplished by the sweep paddle at inner base of the Crutcher.

Houchin Crutchers can be furnished with tanks of black iron, or with inside surfaces of stainless steel or Monel, with various types of screw or mixing blades. Tanks can be jacketed for heating or cooling.

Write for full details today.

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HOUCHIN MACHINERY CO., INC.

Sixth & Van Winkle Avenues

Hawthorne, New Jersey, U. S. A.

Manufacturers Of Soap Making Machinery For Over A Century.

Optimum Performance of Wax Filters

EVERY wax processing plant has certain operations and types of equipment which are unique. However, some operations are common to all. One of the most important is filtration. In spite of this, or perhaps because of it, a careful evaluation of a filter station will almost always result in improved performance, or lower cost.

This discussion will cover two types of filtration—the filtration of molten raw natural waxes and the clarification of wax emulsions.

The process for collecting natural waxes such as carnauba, ouri-curi, etc., intrinsically involves filtration as a purifying step before these waxes may be used. Occurring as protective covering on the leaves and stems of their parent plants, natural waxes must be scraped and beaten from the sun-dried leaves.

* Paper presented Dec. 5, 1956, during 43rd annual meeting, Chemical Specialties Manufacturers Assn., Washington, D. C.

By T. M. Jackson, Jr.*
Product Manager, Celite Division
Johns-Manville Products Corp.

Naturally, dirt and plant matter will be included in the raw wax. Some reports have indicated the amount of this dirt may vary from three to twelve per cent by weight, depending on the type of wax and care taken in recovering it from the plants. Because of the variance in the color of natural waxes, decolorizing clay and frequently activated carbon are used together with filter aid to clean up the crude material.

In making wax emulsions, it is extremely difficult to emulsify all ingredients completely. Thus, filtration with filter aids is usually required to prevent sedimentation or "creaming" in the finished product and to remove foreign matter picked up in processing.

Filter aids are used in almost all types of wax filtration to pre-

vent sliming of the filter septum and to maintain a porous filter cake which gives faster flow rate and makes cake easier to steam at end of cycle. The most widely used filter aid is made from diatomite, or diatomaceous earth.

Crude diatomite is formed from dead single cell plants called diatoms. Figure 1 shows several of the more than 10,000 types so far identified. These plants occur in both fresh and sea water, and after death sink to the bottom. Several million years ago, conditions for prolific growth of diatoms were just right in the seas covering what is now southern California. As a result, the world's largest diatomite deposits occur in this area.

Production of filter aids from these deposits consists briefly of quarrying, crushing, drying, milling and air classification. The resultant natural powder is quite fine. The coarser, more important filter aids are made by calcining the milled crude, either alone or with an alkaline flux, followed by further air classification.

The major filter aid producers market a line of nine standard grades which, from a usage standpoint, differ only in their particle size distribution. Figure 2 is a chart showing the distribution for several "Celite"* grades made by Johns-Manville.

In a filtration of a liquid to remove very fine or slimy particles, the available filter septa are either too coarse to remove fine solids, or so fine they quickly become plugged. This can be prevented by protecting the filter septa with a layer of filter aid, called the precoat, applied from a slurry of clear liquid.

* Registered trade mark of Johns-Manville Products Corp.

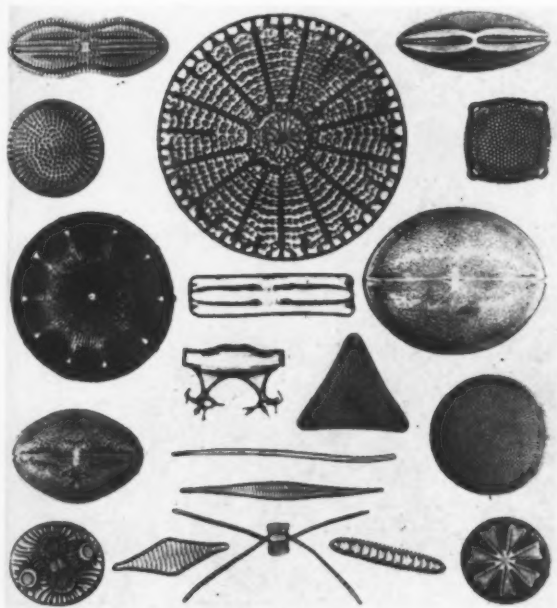


Figure 1. Photomicrograph of Typical Diatoms.



MECCANICHE

CORSO SEMPIONE, 51

MODERNE

BUSTO ARSIZIO (ITALY)



"SABIZ" SPRAY DRYING PLANT

"BALLESTRA" Patent

Manufacturing Characteristics

Atomization spray nozzles.
Adaptable to three modes of operation: parallel flow, countercurrent and mixed flow.
Product discharged at room temperature; eliminates agglomeration.
Free discharge of product without use of auxiliary equipment.
Direct or indirect utilization of gases obtained by the complete combustion of fuel oil or natural gas.
One main panel for control and operation.
Automatic continuous perfuming possible.
Can spray dry heat sensitive products.

Standard Outputs

From 250 Kgs. per hour up to 3000 Kgs. per hour and more, if required.
Efficient operation of the plant results in substantial savings.

Physical Characteristics of the Dried Products

From the same slurry, merely by adjusting some valves, it is possible to get:

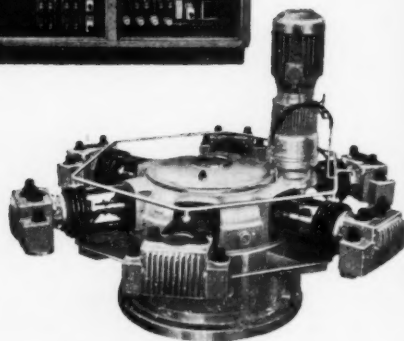
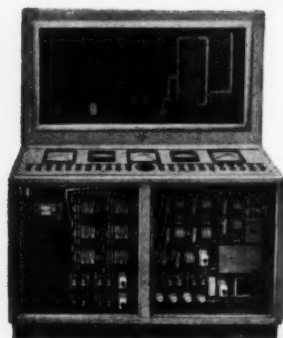
Dried products such as hollow beads or fine powder.
Crystallized products such as beads or granules.

Adjustable to a wide range of specific gravities

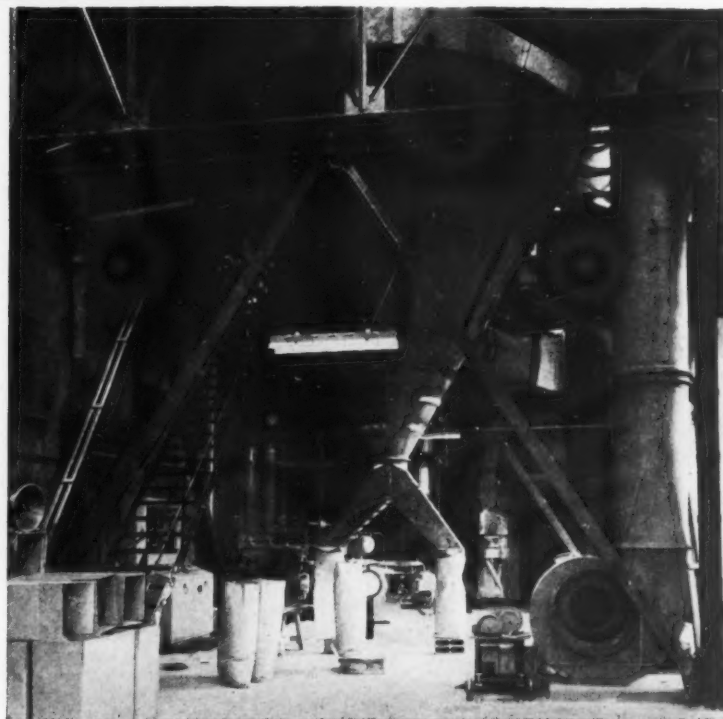
from the same slurry. If used for synthetic detergents, this plant can be operated automatically in connection with our continuous sulfonation plant "SULFAN."
Without any obligation to you, our technical staff, research laboratory and experience are at your disposal: let us solve your production problems.

Please don't hesitate to ask for references, analyses, offers, samples, visits to factories equipped with our plants, etc.

500 Kgs. per hour "SABIZ" Spray Drier in operation at HUIERIES ANTONIN ROUX & SAVONNERIES J. B. PAUL — MARSIGLIA (FRANCE).



U. S. Sales Representatives:
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507 Fifth Ave., New York 17, N. Y.



SOAP and CHEMICAL SPECIALTIES

Approximate Particle Size Distribution of Celite Filter Aids

Size* (Microns)	Filter-Cel	Hyflo Super-Cel	Celite 503	Celite 535	Celite 545
>40	2.5	6.0	12.0	17.5	24.0
40-20	8.0	15.5	25.5	32.0	52.0
20-10	14.0	33.5	29.0	32.0	18.5
10-6	19.0	22.0	19.5	16.0	4.5
6-2	37.5	21.5	13.5	2.5	1.0
<2	19.0	1.5	0.5	—	—

* Equivalent sphere size by sedimentation methods.

Figure 2. Particle Size Distribution of Several Celite Filter Aids.

To prevent plugging the surface of the precoat, additional filter aid, called body feed, is usually added along with the liquid being filtered so that the filter cake will remain porous.

Figure 3 is a graphical representation of the precoat and body feed.

Selection of a filter aid for a specific filtration is done by trial and error. In general, the finest grade will give the best clarity and the lowest flow rate under a given set of conditions. The coarser grades give progressively faster flow rates but have lower clarifying capacities. The proper grade to use is the one which gives satisfactory clarity at the highest flow rate. In the wax industry, the medium range of filter aids has proven to be most suitable.

The amount of filter aid to use depends on the size and type of the filter for the precoat, and

for body feed on the amount and nature of the suspended solids in the liquid to be filtered. Precoats range from seven to twelve pounds per 100 square feet of filter area, depending on the type of filter used. Where the body feed is in excess of

ten wax filtration runs from 0.5 to 0.6 per cent by weight, and in wax emulsion filtrations from 0.05 to 0.2 per cent.

Figure 4 is a chart showing variation in performance with dosage of body feed for a typical filtration. Best operation from standpoint of filter aid economy is at the optimum point in the curve. Consideration of other cost factors, however, usually shows that optimum overall costs will be achieved between the two limits shown.

In wax filtrations the most widely used filters are the plate and frame, pressure leaf and horizontal plate types. The plate and frame is

Figure 3. Diagram Showing Precoat and Cake Formation.

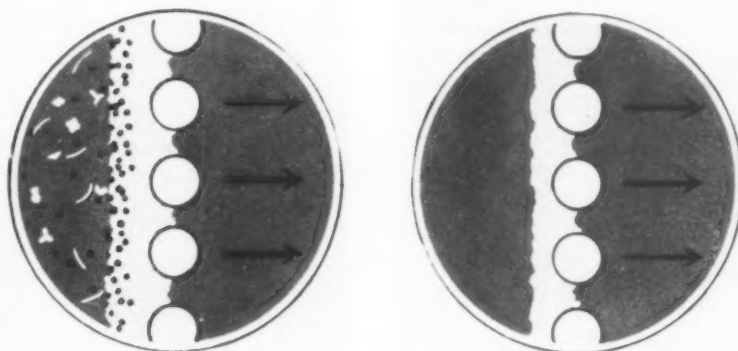
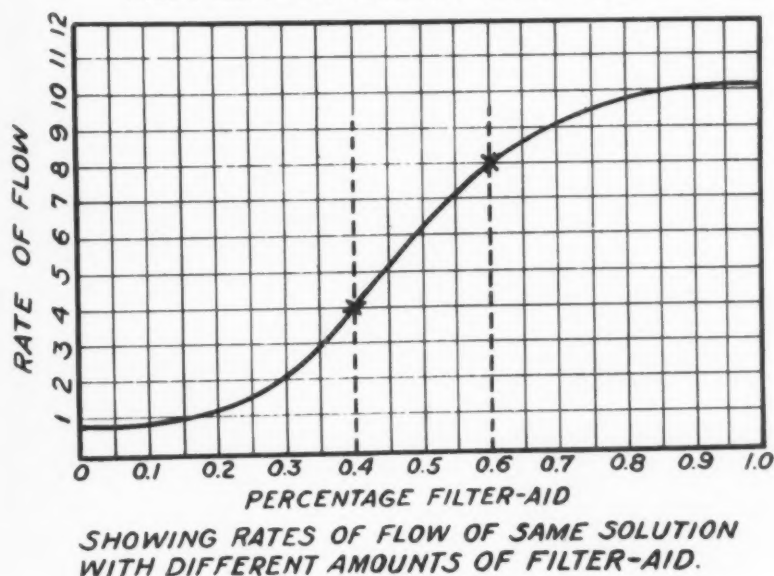


Figure 4. Chart Showing Variation Flow Rate Vs. Body Feed.



used for both the filtration of molten wax and wax emulsions, while the pressure leaf and horizontal plate units are used primarily on emulsions.

Plate and frame filters are still the most widely used in the industry. A typical installation for molten wax is shown in Figure 5. Because of the ease of heating, small "heel," ease of cleaning out solidified wax cakes, the relatively small batches filtered, intermittent production involved and the high solids contents of most raw waxes, plate and frame filters are used almost exclusively in handling molten wax filtrations.

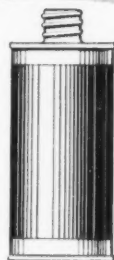
Figure 6 shows a cutaway view of a horizontal plate filter. This type filter has been called a "plate and frame in a tank." One of its major advantages is that the

For Liquid Detergents . . .

HORIX *Gravity Fillers* WITH **NON-AERATING FILLING VALVES**

HORIX Non-Aerating Filling Valves eliminate the prime cause of heavy foam—the mixing of trapped air with the product.

The ease and simplicity with which this is accomplished is illustrated by flow diagram on the right—liquid port directs flow of product gently down one side of container, forcing air in container up opposite side and out through the air vent. The flow is by gravity, proven over the years as the finest most efficient lowest-unit-cost method for liquid filling.



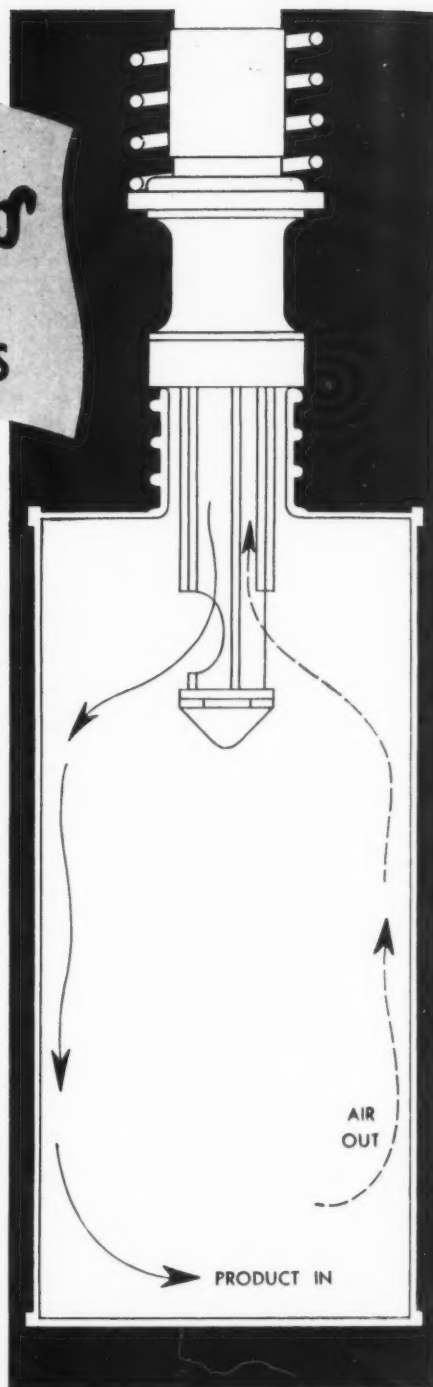
HORIX OFFERS MANY OTHER OUTSTANDING ADVANTAGES

- **Lasting Accuracy**—Fill cuts off exactly at established filling height at any operating speed. Horix filling valves retain their accuracy through long years of use.
- **Individual Container Control**—The positive individual control at both infeed and discharge assures smooth, quiet handling of containers of any shape or size.
- **No Need for Product Reclamation**—Valves vent directly to filler tank, thereby eliminating need for overflow system.
- **Horix Tank Acts as "Holding and Settling" Tank**—Gives product chance to settle before it goes into container.
- **Simple, Rugged Construction**—Horix Fillers require only supervisory attention and minimum maintenance.
- **Tin, Glass, Plastic Containers**—Each size and style handled with equal efficiency on a Horix.

Write for latest illustrated Bulletin No. 156-S. It describes Horix entire line of liquid fillers for low or high speed production.

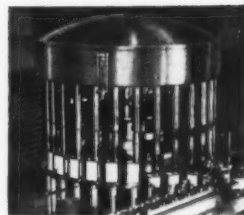


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FILLERS AND CONVEYORS



TYPICAL HORIX GRAVITY FILLER

Illustrated is the High Speed Model HA-28. Fillers available for any production speed.



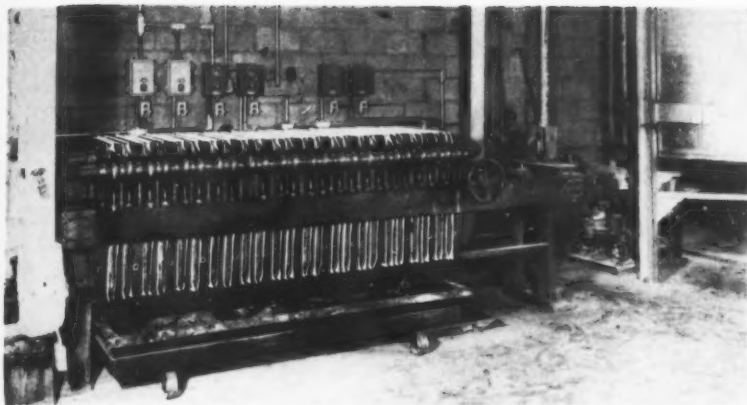


Figure 5. Typical Installation Plate and Frame Filter.

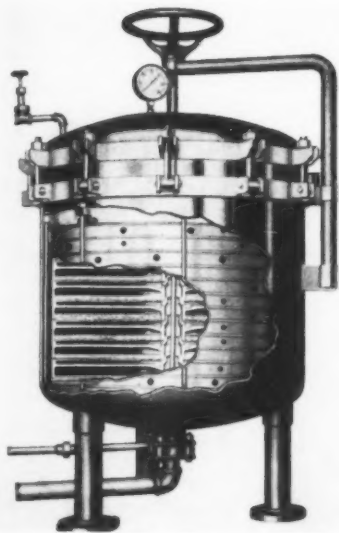
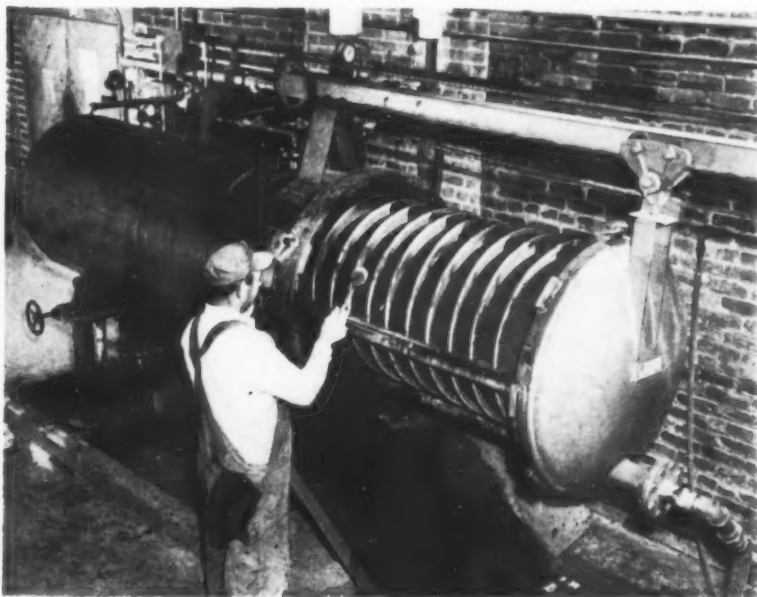


Figure 6. Cutaway Photograph, Horizontal Plate Filter.



Figure 7. Cutaway Photograph, Vertical Tank, Pressure Leaf Filter.

Figure 8. Typical Installation, Horizontal Tank, Pressure Leaf Filter.



filter cake is built up on a horizontal surface rather than on a vertical surface as in the case of other filters. In this way, danger of cake upset due to interruption or fluctuation of flow is virtually eliminated. The filter plate cartridge can be easily removed by one man and a hoist. By using a second cartridge, the filter can be put back on the line while the dirty cartridge is cleaned. The amount of heel left at the end of the cycle can be minimized by use of a scavenger plate.

Pressure leaf filters are of two types, vertical and horizontal tank units. In the wax industry, such filters all use a relatively permanent metal filter cloth as the septa rather than filter paper. Pressure leaf units are best suited to relatively large scale semi-continuous or continuous operation. Ease of cleaning and relatively short periods of down-time usually result in much lower labor costs per unit of product. Scavenger plates can minimize loss of heel.

Figure 7 shows a vertical tank pressure leaf filter. Note the sluing feature at the top of the leaves which permits cleaning the filter without opening the cover.

A horizontal tank pressure filter is shown in Figure 8. Such units are available in large sizes. A major advantage for these units is that the filter cake can be easily recovered in dry form by exposing the leaves at the end of the cycle as shown.

Choice of the right filter for an emulsion filtration depends on the individual set up in a given plant. All three types when properly installed and operated will give a good quality product. Selection, therefore, depends on such items as initial cost, cost of filter paper where used, frequency of use, whether batch or continuous operation, cost of labor and so on.

Figure 9 shows the approximate initial costs of the units. These curves are based on 1956 prices from at least two manufacturers of each type filter. The prices are for the filter only and include no ex-

(Turn to Page 192)

Continuous Soap Plants

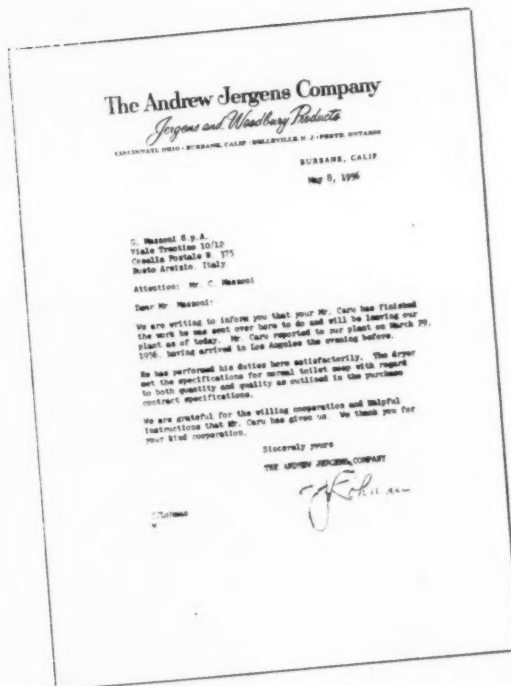


Photograph of a MAZZONI soap plant automatically producing one ton of household or toilet soap per hour. "S" is the silo for the storage of the dried soap rods. From the silo the rods are then passed through a line of finishing machinery for milled soap cakes.

- ★ The Vacuum Process, over all other old and new cooling methods, enables you to make use of the water at the temperature available at any factory as it is possible to cool the soap at such a temperature because of the vacuum and the peculiar devices provided — without resorting to expensive cooling equipment—so that its consistency is satisfactory no matter what the cooling water temperature is.
- ★ Our manufacturing range also includes: plants for continuously sulphonating and spray-drying synthetic detergents in the form of hollow beads—continuous fat splitting and fatty acid saponification plants—continuous glycerine recovery and refining plants.

Advantages of the MAZZONI Process:

- ★ Small plant space; only one operator needed.
- ★ Saves 70% in steam, 50% labor, 40% electric power.
- ★ Operates at low temperatures, avoiding deterioration of soap.
- ★ Vacuum process gives better toilet soaps. Deodorizing effect reduces perfume needs. Smoother, grit-free cakes which wash off evenly. Improved lathering.
- ★ Transparent toilet and laundry soaps without addition of glycerine, alcohol, sugar, and any other additives.
- ★ Complete installations (mixers, mills, plodders, cutters and stampers) for milled toilet soap and soap flakes.
- ★ Since 1945 more than 130 plants have been installed in different countries of the world.
- ★ Laundry soaps, pure from 62% fatty acids upwards or filled from 35 to 62% fatty acids, ready for pressing and immediate packing without slabbing, cutting, etc. Automatic perfuming device included.
- ★ Suitable for adaptation in any soap factory, —a compact, low-cost vacuum process, continuous from neat soap to pressing and wrapping.
- ★ Soaps showing a beta phase content from a minimum of 75 percent to a maximum of 100 percent. Analyzed in the laboratories of Procter & Gamble Company, Cincinnati. Analysis is given with their permission.
- ★ Plants for outputs of one-quarter-ton, half-ton, one ton, two tons, three tons or higher per hour.



For further detailed information, write to
G. MAZZONI, S. p. A.
 Busto Arsizio, (Varese) Italy
 Cable address: Cosmazzoni, Busto Arsizio

Book Reviews

Dow Silicone Brochure

A new booklet, listing and describing almost 150 of its silicone products, was issued recently by Dow Corning Corp., Midland, Mich. The booklet lists products according to application. Some of the group headings include release agents, adhesives, defoamers, protective coatings, molding compounds and cosmetic ingredients. In addition, the 12-page catalog is fully illustrated in two colors and contains charts, tables and graphs directly comparing the silicones to products of similar use. Copies are available on request.

New Bobrick Catalog

A new catalog, listing and describing its line of dispensers, has been issued by Bobrick Dispensers, Inc., Los Angeles, Calif., it was announced recently by James E. Pollak, vice-president of sales. In addition, the fully illustrated four-page, two-color booklet gives complete information on the firm's tank-type soap systems and liquid soap valves. Copies may be obtained from the company, at 1214 Nostrand Ave., Brooklyn 25, N. Y., or 1839 Blake Ave., Los Angeles 39.

New GE Silicone Catalog

More than 115 uses of silicones are described in a new fully illustrated, eight-page catalog, recently issued by General Electric Co., Waterford, N. Y. Among the applications covered are polishes, textile finishes, anti-foam agents and cosmetics. In addition, the booklet lists literature covering product and application data as well as major GE silicone products. Copies of the catalog, #CDS-97, may be obtained from the company.

New Becco Bulletins

Structure, properties, reactions and suggested uses of two new epoxy compounds, dipentene monoxide and alpha-pinene oxide, are described in two new technical

bulletins, recently published by Becco Chemical Division of Food Machinery and Chemical Corp., New York. The two new compounds are designed for use as solvents, plasticizers for resins, and in the manufacture of insecticides, pharmaceuticals, flavorings, perfumes, protective coatings, lubricant additives, adhesives and flota-

tion agents. Both products are available in laboratory and drum quantities. Copies of the bulletins, #81 and 82, may be obtained from Becco, Station B, Buffalo, N. Y.

Sikkel Joins Stauffer

William A. Sikkel has joined the agricultural division of Stauffer Chemical Co., New York, as mid-west sales representative, it was announced recently. His territory includes Michigan, western Ohio and northern Indiana.



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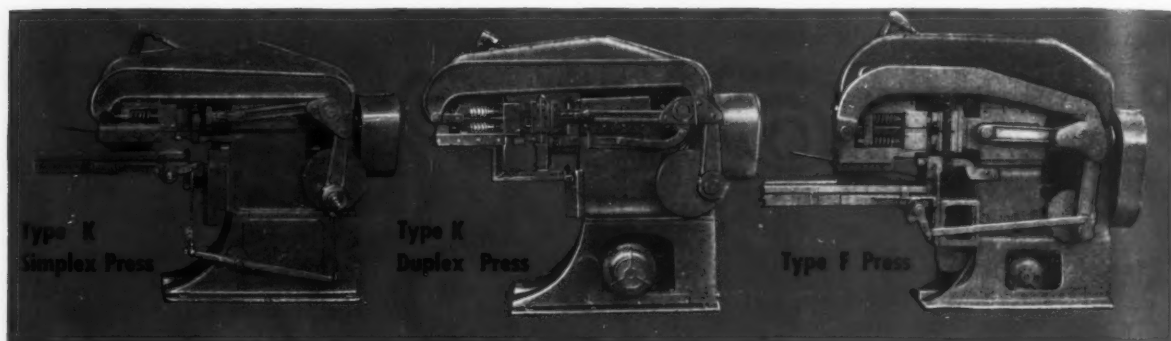


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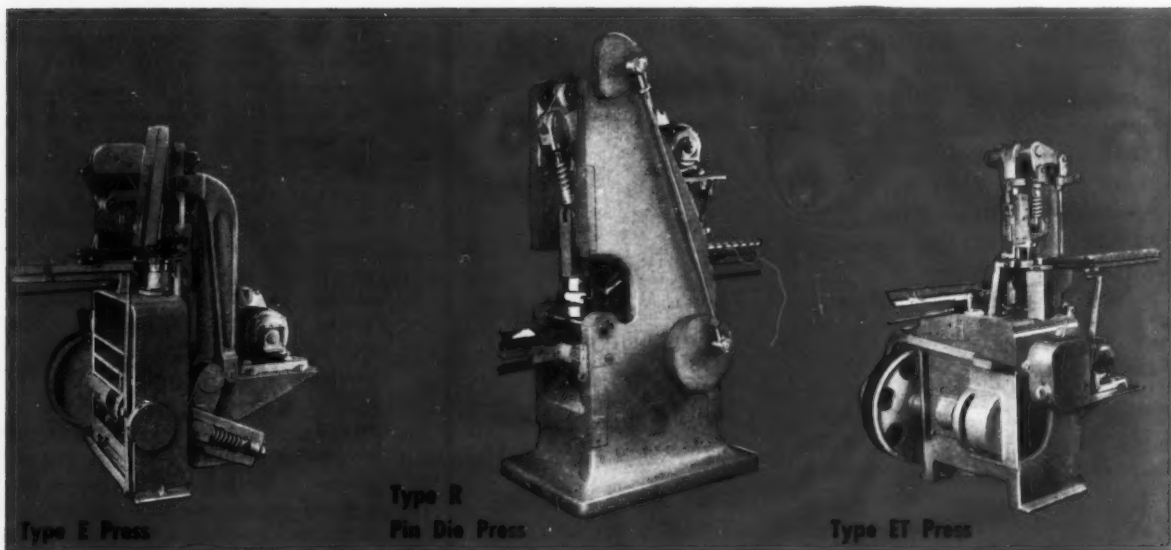
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Cartoners — Case Packers — Soap Presses

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NEW Patents

The data listed below is only a brief review of recent patents pertinent to the readers and subscribers of this publication. Complete copies may be obtained by writing to the publisher of this magazine, MacNair-Dorland Co., 254 W. 31st Street, New York, 1. N. Y., and remitting 50c for each copy desired. For orders received from outside of the United States the cost will be \$1.00 per copy.

No. 2,776,943. Treatment of Soap Particles, patented by Stanley L. Eaton, Cincinnati, O., assignor to Procter & Gamble Co., Cincinnati. In the process of reducing the balling tendencies of particulate compositions consisting essentially of sodium soaps containing insufficient soaps of saturated fatty acids having 8 to 14 carbon atoms to prevent balling of the particles and an amount of sodium silicate solids not less than 1½% and not greater than 50% of said composition and uniformly distributed therein the patent claims the steps of applying to the particles from 1% to about 7% of a saturated fatty acid having 8 to 14 carbon atoms and reacting said fatty acid in fluid condition with silicate solids at the surface of said particles. A particulate soap product consisting of an inner portion of a soap composition consisting essentially of sodium soaps containing insufficient soaps of saturated fatty acids having 8 to 14 carbon atoms to prevent balling and at least 1½% and not more than 50% of sodium silicate uniformly distributed therein, and a crust portion comprising the reaction products of silicate and saturated fatty acids having from 8 to 14 carbon atoms in the molecule, the amount of said fatty acid being equal to from 1% to about 7% of the weight of the soap particle the SiO₂/Na₂O ratio of the silicate in the crust portion being greater than that of said inner portion is also covered.

No. 2,776,239. Piperonylidene Tetrahydrofuranone, patented by Daniel C. Rowlands, Worthington, O., assignor, by mesne assignment to Air Reduction Co., New York. Described is an insecticidal composition comprising a product selected from the class consisting of pyrethrum and allethrin, and as a synergist therefor 4-piperonylidene -2,2,5,5-tetramethyltetrahydro-3-furanone.

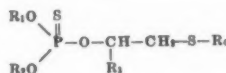
No. 2,779,703. Fungicidal Mercury Tertiary Butyl Mercaptide Compositions and Method of Applying the Same, patented by Willie W. Crouch and Lyle D. Goodhue, Bartlesville, Okla., assignors to Phillips Petroleum Co., Bartlesville. Covered is a fungicidal composition which is substantially nontoxic to the fungi situs comprising

from 0.1 to 10,000 parts per million of mercury tertiary butyl mercaptide dispersed in a fluid fungicidal adjuvant as a carrier therefor.

No. 2,779,708. Dextran Dentifrice Preparations, patented by Kenneth Lyman Russell, Nutley, and Manno Frederick Nelson, Jr., Madison, N. J., assignors to Colgate-Palmolive Co., New York. The patent discloses a dentifrice composition comprising at least about 20 per cent by weight of water-insoluble polishing material, an organic detergent, and dextran in an amount from about 0.1 to ten per cent by weight as an added cleansing agent.

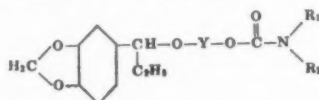
No. 2,767,071. Herbicidal Compositions, patented by Henry L. Morrill, Clayton, Mo., assignor to Monsanto Chemical Co., St. Louis, Mo. A herbicidal composition is described comprising from one to five mole weights of the dimethylamine salt of 2,4-dichlorophenoxyacetic acid for each mole weight of the isopropylamine salt of 2,4-dichlorophenoxyacetic acid.

No. 2,777,792. Pest Combating Agents, patented by Karl Lutz and Otto Jucker, Basel, Switzerland, assignors to Sandoz A. G., Basel. A pest controlling composition is revealed consisting essentially of a thionophosphoric acid ester which corresponds to the formula



wherein each of R₁, R₂ and R₃ represents a lower alkyl group and R₃ represents a lower alkoxymethyl group, and a pesticide carrier therefor.

No. 2,773,062. Organic Compounds and Insecticidal Compositions, patented by Edward A. Prill, Yonkers, N. Y., assignor to Boyce Thompson Institute for Plant Research, Inc., Yonkers. Described is a compound represented by the formula



wherein Y is a member of the group consisting of divalent alkylene radicals containing from 2 to 6 carbon atoms and divalent alkylene radicals containing from 2 to 6 carbon atoms which are interrupted by an ethereal oxygen atom, R₁ and R₂ are selected from the group consisting of the following elements: The hydrogen atom, monovalent alkyl radicals having 1 to 20 carbon atoms, monovalent hydrocarbon cycloalkyl radicals having not more than six carbon atoms in a cyclic ring and having not more than 20 carbon atoms in the radical, monovalent alkoxyalkyl radicals having not more than 12 carbon atoms, the phenyl radical, monovalent aralkyl radicals having 7 to 10 carbon atoms, the furfuryl radical wherein not more than one of R₁ and R₂ is the furfuryl radical, the tetrahydrofurfuryl radical wherein not more than one of R₁ and R₂ is the tetrahydrofurfuryl radical, not more

than one of R₁ and R₂ being hydrogen, and elements which form, with the nitrogen atom of



to which they are attached, the piperidino radical, the morpholino radical, the 2-methylpiperidino radical, the 5-ethyl-2-methylpiperidino radical, and the pyrrolidino radical.

No. 2,776,238. Bactericide Composition and Method of Using Same, patented by Gerald I. Keim, Oxford, Pa., assignor to Hercules Powder Co., Wilmington, Del. The patent reveals a bactericide composition comprising a salt of an unsubstituted N-(γ-aminopropyl) rosin amine and an acid selected from the group consisting of acetic acid, formic acid, glycolic acid, monochloroacetic acid and hydrochloric acid, and a bactericidal adjuvant selected from the group consisting of acetone, alcohol, benzene, gasoline, kerosene, pine oil and water. The patent also teaches a method for inhibiting growth of bacteria in a liquid-carrying system which comprises adding to said system a salt of an unsubstituted N-(γ-aminopropyl) rosin amine and an acid selected from the group consisting of acetic acid, formic acid, glycolic acid, monochloroacetic acid and hydrochloric acid.

★

No. 2,779,516. Dispensing Valves, patented by Jack W. Soffer, St. Louis, Mo., assignor to Development Research, Inc., St. Louis. The patent covers a dispensing valve for gas-pressure containers, comprising a container wall portion having a circular aperture, a sealing member formed of resilient material having a tubular sleeve portion extending through said aperture, the outer surface of said sleeve portion being in close sealing contact against the inner wall of said aperture, the sealing member further having a radially-enlarged body portion at the inner end of the sleeve portion, said body portion having at its inner side a valve seat portion, the said body portion further having a central passage extending from the valve seat portion outward to enter into the sleeve portion, the said body portion further having a girdle extending inward into said central passage at the juncture with said sleeve portion and forming a constriction at a level inward of the container wall, together with a tiltable tubular rigid valve member having a stem protruding through said central passage, girdle and sleeve portions, a stem port and an imperforate head adapted to close against said valve seat portion, the stem wall being smoothly cylindrical in the region encompassed by the girdle and having a diameter greater than that of the opening in the girdle prior to insertion of the stem therethrough whereby tensile force set up in the body portion on the insertion of said stem seals it at a level inward of such aperture.

No. 2,777,735. Aerosol Dispensers, patented by Edward H. Green, Addison, Ill. Described is an aerosol dispenser, comprising: a cover for a container; an elastic ring with a cen-

(Turn to Page 191)



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MMeet the nation's No. 1 spender—Mrs. Housewife—hard at work proving it pays to see Victor. Almost every item she shops for today is more to her liking, more convenient to use or more healthful because of Victor chemicals.

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Products and PROCESSES

Cleaning Tissues

A new impregnating composition for cleansing tissues or leaves consists of 30 to 70 per cent sulfated lauryl alcohol, 15 to 35 per cent ethyl alcohol, and 15 to 35 per cent water. A perfume may be added to this composition. If desired, the tissue or leaf is impregnated on one face only. Impregnation on both sides is required if conventional mixtures are used. These commonly consist of sulfonated lauryl alcohol in weak concentration, mixed with other fatty alkyl sulfates, fatty amides and detergent amines. Brit. patent No. 748,061, Paynes & Byrne Ltd., Pabryn Laboratories, Greenford, Middlesex.

Produces UHF Washers

Shimada Scientific Industry Co. of Japan has begun mass production of a machine that uses ultra-high-frequency sound waves to clean delicate precision instruments. The ultrasonic waves remove all traces of dirt, grit and grease without scratching delicate surfaces and without the need to disassemble the units, according to the Japan External Trade Recovery Organization.

New Hydrogenation Unit

Improved economy and efficiency in the hydrogenation of fatty acids is claimed for a new process introduced last month by Process Plants Division of Industrial Process Engineers, Newark, N. J. The modified high pressure process hydrogenates difficult oil stocks to exceptionally low iodine values without significant increase in catalyst or hydrogen consumption. Batches ranging from 10,000 to 30,000 pounds may be run by the unit which operates at 300-600 psi.

Two novel features are incorporated in the I.P.E. design, said to ensure optimum utilization

of hydrogen: operation in a series of two hydrogenators and continuous automatic control of hydrogen being vented from the reactors.

I.P.E. claims that its process can be guaranteed on the basis of simple laboratory tests to produce specific iodine values for given materials. Commercial feasibility of the process can in each instance be calculated from these results.

New Super-Fatting Agent

"Robane" is a new ingredient for creams and super fatted medicated soaps introduced recently by Robeco Chemicals, Inc., New York. Described as a saturated hydrocarbon of animal derivation known as perhydrosqualene, the material is said to form a protective film similar to the silicones and to show promise as a super fatting agent. Because it encourages skin penetration by any topical agent with which it is formulated the new material is suitable for incorporation in medicated creams, soaps and other specialties.

Liquid Syndets from A.B.S.

How to make efficient low-cost liquid detergents from alkyl benzene sulfonates is described by J. Payne and I. W. Preston, Monsanto Chemicals Ltd., England, in the December, 1956, issue of *Manufacturing Chemist*, pp. 500-502.

In processing alkyl benzene to form liquid detergents of good solubility as much spent sulfuric acid as possible must be removed from the alkyl benzene sulfonic acid before neutralization. This may be accomplished by close supervision of the washing process after sulfonation, by sulfonation with 100 per cent sulfuric rather than with 20 per cent oleum, or by sulfonation with sulfur trioxide which yields a paste of low sulfate content without separation before neutralization.

Two types of methods are

available for formulating alkyl benzene sulfonates to give solutions of greater concentrations and lower cloud points: adjuvants as solubilizing agents may be used. These include urea, dicyandiamide, alcohol, and nonionic surfactants; or alternative alkalies to caustic soda may be used for neutralization to obtain a more soluble salt including ammonia and triethanolamine.

Using these agents in various combinations formulations for three grades of liquid detergents are presented: 12, 25 and highly concentrated 40 per cent active products.

Summarizing their observations the authors find tetrapropylene benzene the lowest priced detergent base providing all-round efficiency in detergency, wetting and foaming. Concentrated liquid detergents based on tetrapropylene benzene perform excellently. Household and industrial products at competitive prices can be made even in the presence of adjuvants.

Precise formulation, of course, must be adapted to end use. For example, a fatty alkanolamide might be incorporated for improved foaming characteristics in a household product. Formulations using nonionics might be indicated under acid conditions in the textile field.

New Automotive Sealant

A new automotive sealant resistant to the action of detergent additives in automotive lubricants and special fuels was placed on the market last month by Permatest Co., Huntington, N. Y., manufacturer of automotive and industrial maintenance specialties. "Super 300" is a brushable, heavy bodied liquid designed for use as a sealant wherever oil or gasoline contacts the seal. In addition to ease of application and resistance to the washing out action of detergents the product is said to withstand great pressures and temperatures up to 450°F. The new sealant comes in one-quarter pint, pint and gallon containers; the first two sizes are equipped with applicators.



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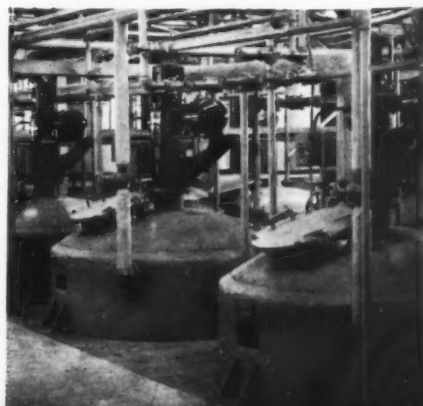
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| <input type="checkbox"/> Portable: 1/8 to 3 HP (B-108) | <input type="checkbox"/> Condensed catalog showing all types (B-109) | <input type="checkbox"/> Data sheet for figuring mixer requirements (B-107) |

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PRODUCTION *Clinic*

By E. G. Thomssen, Ph. D.

DURING prosperous times, when business is booming and sales keep constant pressure on production capacity, cost factors are relegated to a considerably less important place than they would occupy normally. This condition, typical of the hectic days of World War II, has carried over in the postwar period of prosperity, and right down to the present. Examination of company financial reports for recent months reveals that it is not unusual for sales volume to be up and profits down from comparable periods a year ago. In other words, the cost of doing business has increased faster than profits. It is not always possible to pass on increasing costs to the ultimate consumer, because competition, especially in soaps, detergents and chemical specialties, has grown so much keener. Under present conditions of increased sales and shrinking profits many companies are taking a more thorough look at their costs and seeking means of reducing them.

In the production end of a business it is quite possible to reduce costs in several ways. Of prime importance is the necessity of having an accurate cost accounting system. It has been the writer's observation that smaller companies, particularly, do not know their actual production cost. In many instances they depend upon someone who is not sufficiently versed in this field to give an accurate cost picture. In order to economize on their accounting costs such companies dispense with a good cost clerk who, if given the opportunity, undoubtedly could save the firm many times his salary.

Only recently, I learned of a company which had grown rather rapidly and, yet was still depending upon a crude cost system. When



Dr. E. G. Thomssen

auditors were called in they were appalled at the errors in costing they found. During the first few months after a sound system of accounting was installed, profits increased materially.

Once an efficient cost system has been installed, certain procedures are required to make it work. Without the loyal support of production personnel, no cost system will operate satisfactorily. At times factory men are of the opinion that the checking of cost by an accountant reflects upon their ability. While most cost clerks are office employees, some companies have their cost accounting office in the plant. By being nearer the operations, and in closer contact with plant men it operates more smoothly and harmoniously.

It is not the purpose of this article to propose a cost system. A few comments on past experience with costing in plant work, however, may be valuable.

In manufacturing products in the chemical specialties field, it is desirable, in order to ascertain costs correctly, to break down the many items we cover in bulk costs and packaging costs. Specification sheets for bulk batches and finished

packaging details must be carefully drawn up so as not to miss a single item. Because wages represent so large a share of the cost of the finished product, wage rates should be determined by time studies, and the idle or non-productive time should be accurately established. Overhead charges are an area into which errors can easily creep. Someone experienced in determining such costs should be consulted so as to include every non-productive expense.

When these prerequisites are met it is more readily possible to put into effect a cost reduction program. Such a program is best carried out by a committee of not less than three.

With the specification sheets before this committee, each manufactured item should be examined closely with the object of paring its cost without impairing its quality or package appearance. When a product is made in quantity, even a small fraction of a cent per item mounts up to a sizable figure in the course of a year. Items such as labels, closures, circulars and cartons all add to costs. Some companies seek the cooperation of their employees as to suggestions for reducing not only charges for labor but packaging improvements. Many valuable ideas have been obtained by employee suggestions.

Once the cost control committee has made decisions it is good policy to consult other departments, especially sales and advertising, as to the advisability of making changes. They also may have helpful suggestions. An example of this concerns a committee which had decided to eliminate the carton on a certain product. When the sales department was consulted, it suggested a combination package of two items instead of one. When its proposal was adopted not only was the cost reduced, but sales volume was greatly increased.

Cost reduction in compounding or producing bulk material is best left to the direction of the

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technical staff. These men, however, also require prodding. A periodic check of formulas, in view of advances made in processing equipment and in raw materials, may result not only in labor savings, but in raising the quality of finished products.

Supervisory and maintenance employees can also be helpful in cost reducing efforts. There are many small leaks around a plant which do not become evident until a thorough investigation is made. Sources of such leaks include incorrect postage, excess telephones and telephone calls, dripping faucets, petty thefts, unnecessary steps, waste of paper, needless records, etc. These and other items should be watched closely in any attempt to cut costs.

Recently I read of a company that made an intensive survey of the items listed above, usually considered inconsequential. As a result of its study, this firm saved \$40,000 in a year and a half.

It is hardly necessary to do more than mention operating costs. Alert production men are always interested in this phase of their work. It should be emphasized, however, that in times of declining profits greater stress must be placed on reducing or eliminating needless non-productive costs.

If the aim of management and production is to make spending so effective that every last squeal is obtained from every dollar spent, profits will be much improved without increasing prices of finished products. As some have stated: "Betterment and improvement" promote effective spending, especially if those who do the spending help to create the improvements.

Uses "Trans-Wrap" Unit

OLD EMPIRE, INC., Newark, N. J., manufacturing chemists and contract packagers, recently announced that it is in a position to package items with a "Trans-Wrap" packaging machine. The

unit produces attractive packages of such items as powders, granules, detergents and tablets. Such wrapping materials as metal foil, cellophane or polyethylene can be handled by the "Trans-Wrap" machine.

Protective Coating

IN cases where paints fail to protect plants and equipment from fumes or sprays from corrosive chemicals, Gates Engineering Co., Wilmington, Del., supplies "Neoprene N-700 Coating", a protective coating designed for use where ordinary paints are not suitable.

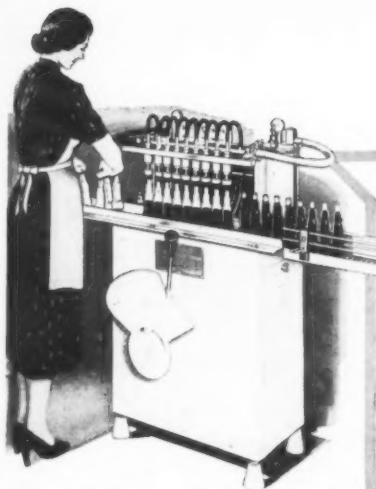
The coating may be applied to metal, wood or concrete at a low cost of application. Among other advantages claimed for the product are resistance not only to corrosion, but also to temperature, surface abrasion, weathering and sunlight.

Controlled Pump

A CONTROLLED volume pump which is so precise as to meter accurately minute quantities of liquids was introduced recently by Milton Roy Co., Philadelphia 18, Pa. The operating range is extremely wide. From three ml to 3200 ml per hour may be delivered against pressures as high as 1000 psi. Either manual or automatic control may be used in pump operation of these pumps. If straight line continuous flow is required a pump that is adjustable is available. Further information may be obtained from the company.

Moore & Munger Folder

A new four-page folder on "Parallint," a hard, high melting point, hydrocarbon wax, was announced recently by Moore & Munger, 33 Rector St., New York 6. The booklet describes chemical properties of the product, plus its use as a modifier in petroleum waxes, and as an intermediate in other chemical specialties. The folder is fully illustrated and can be obtained on request to Moore & Munger.



MODEL B-49 STRAIGHTLINE VACUUM FILLER for liquids and semi-liquids. Most automatic one-operator multiple filler. With or without discharge conveyor. Contact parts of stainless steel; plastics on special order. Adjustable for container sizes from AGST to gallon size finishes. Send for Bulletin B-49.

U. S. SIPHON FILLER. Efficient for all liquids including foamy products or products that do not permit agitation. Stainless steel tubes; acid resistant glass lined tank. Improved model. Adjustable. Write for the Siphon Bulletin.



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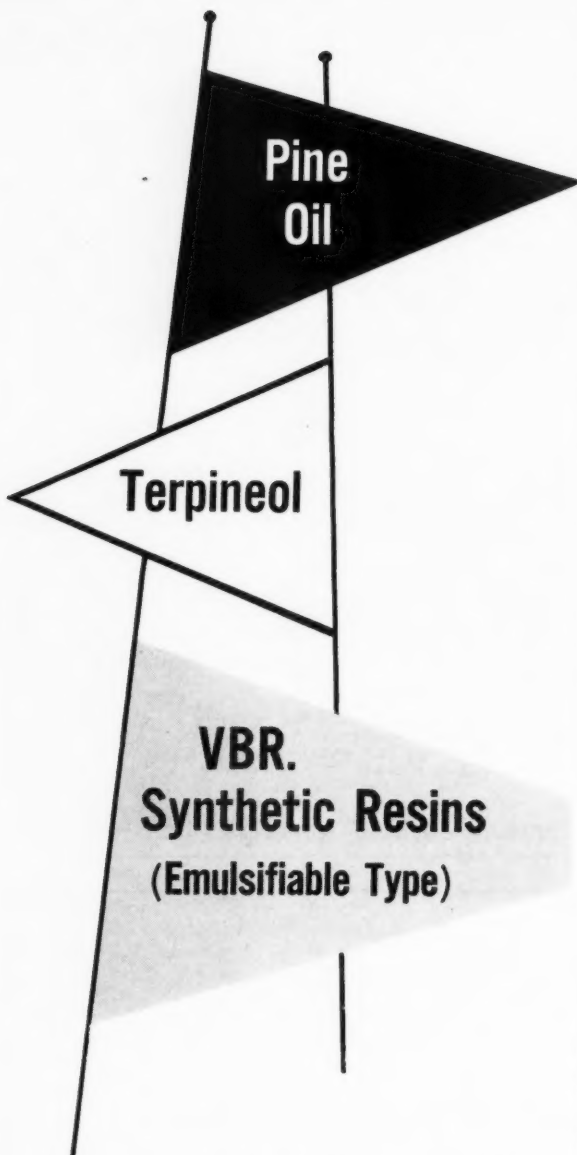


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SOAP and CHEMICAL SPECIALTIES

SOAP PLANT *Observer*

By John W. McCutcheon

AT the recent meeting of the Association of American Soap and Glycerine Producers there was some concern expressed over the trend in fatty acid and detergent use and the factors involved.

Complaints have been heard by the writer that some prices of fatty acids are unrealistic. For example, why should stearic and oleic acids be 17 to 19 cents a pound when the basic raw material is selling for three to four cents? The glycerine credit is included against the raw material price.

The writer does not attempt to answer that question here and now. But it is an interesting one at that! Possibly one answer lies in the fact that the fatty acid industry has not had a terrific expansion rate. There are many factors that have led up to this situation. Probably the most important is the inability of fatty acid manufacturers to stabilize prices in the face of fluctuating raw material prices. Another factor to be considered is the extent to which derivatives can be made direct from oils, without inconvenient and costly conversion to fatty acids first.

For example, alkyd resins may be derived direct from oils. The same is true for fatty alcohols. In any study of fatty acid use, it is most important to evaluate this factor. Of the current 225,000 tons or so of fatty acids being made annually, and so reported, at least another 100,000 tons are being made indirectly to derivatives. These do not get into the columns of the census reports, because the acids are only produced as an intermediate step.

Another prime example of such interchangeable processing is in the manufacture of monoglycerides. The great majority of this "oil-emulsifier" is produced directly



from fats. However, probably 10,000 to 15,000 tons are derived directly from fatty acids. There is no certain way the split can be estimated without going to the companies involved and asking them what their production and sales outlets are. Quite understandably, most companies would hesitate to give out such information to the press. From the writer's observation, however, the following type clues may be of help. Whether alkyd resins are prepared from oils or from fatty acids depends largely on the economics of the situation which include the price of glycerine. The processing equipment generally is interchangeable for such purposes. The writer would not like to estimate present production without some further investigation. Several years ago, however, the figure of acid to oil use was approximately 40/60. Fatty acids have an additional asset besides price. They can be used with polyhydric alcohols other than glycerine, and they can be fractionated within close limits.

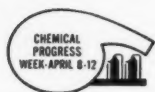
In the case of monoglyceride manufacture, it is safe to assume that nearly all the edible grade material will continue to be manufactured from fats and oils. Pharmaceutical and cosmetic type grades

largely will come from fatty acids. This is because fatty acids can be processed to close specifications. The oils cannot.

Fatty alcohols go principally into detergent manufacture and represent probably a present consumption of 75,000 tons of fatty materials annually. When the process is one of sodium reduction, the oil or fat may be considered the starting material. With the hydrogenation process, the fatty acid is generally used, although the process in such cases may be a continuous one so that the fatty acids merely represent an intermediate stage of processing and may or may not get into the fatty acid statistics depending on the viewpoint of the manufacturer. In general it is estimated here that very little fatty alcohol, no matter how produced, enters into the 225,000 ton figure of total acid production.

A further factor in recent years has also been added. This is the increased quantity of tall oil fatty acids which are becoming competitive to soya bean and oleic acid. The growth of the tall oil business has reached the phenomenal size of over 250,000 tons per year, due to increased pulp usage and a continued demand for the acids. A steady price structure has been a favorable factor. The upgrading process includes the separation of rosin from the fatty acids, a development pioneered by the Arizona Chemical Co. How far this type of separation will go depends on a variety of factors which are beyond the scope of this present column. However, one important point is the diminishing supply of gum and wood rosin, which makes the tall oil derived type very attractive. The surplus tall oil distilled acids are going to find some outlet, and are going to come into direct competition with mixed soya fatty acids, and even with red oil itself. With this mixed-up competitive position, it would pay both parties to set up an extensive research program.

Actually, the fatty acid in-



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dustry grew through two principal channels: the splitting of tallow and its pressing to produce stearic and oleic acids, and the purification of foots as a means of upgrading an obnoxious by-product of oil refining. To this must be added 30,000 to 40,000 tons of coconut type oils annually for the special short chain acids required in many cases. The amount of foots available for conversion to fatty acids is not in unlimited supply and, due to better processing methods of refining, is decreasing in quality. The great change in the fatty acid industry over the past 10 years, is not quantity, but quality. Quietly, specifications of materials have been altered. Fractionation is now common practice and there is less and less tendency to sell acids as from mixed soya foots, etc., as it is to sell them to definite type specifications. Acids derived from tall oil will find tough competition ahead.

It is hoped to continue this discussion next month, on the uses of fatty acids in soaps and detergents.

—★—

New Coumarin Folder

A new folder on coumarin has been published by Monsanto Chemical Co., St. Louis, it was announced recently. The booklet contains specifications of the compound and tables listing its solubility in alcohol-water, glycerine-water and propylene-glycol-water. Copies are available on request to the company's organic chemicals division, 800 North Twelfth Blvd., St. Louis 1.

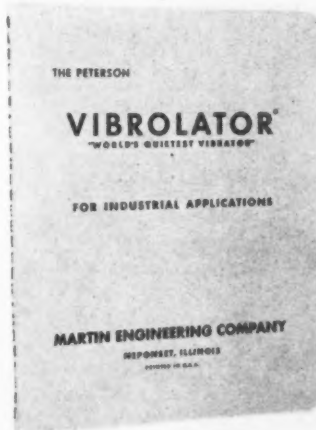
—★—

New du Pont Plant

Plans for construction of a new chemical plant to produce CMC were announced last month by E. I. du Pont de Nemours & Co., Wilmington, Del. The new unit at du Pont's Carney's Point N. J., plant, will manufacture refined as well as technical grades of sodium CMC (sodium carboxymethylcellulose). Construction is now underway with completion scheduled for early next year.

Vibrator Booklet

A new 36-page booklet describing industrial applications of Peterson "Vibrolators," was issued



recently by Martin Engineering Co., Neponset, Ill. The catalog also includes specifications, performance data and characteristics of the all-directional, high-speed vibrators. The bulletin is fully illustrated with graphs and charts and contains several pages of in-plant pictures, showing size and style designations of models now available. Copies of the bulletin may be obtained from the company.

—★—

Pfaunder Buys Pitmar

Pfaunder Co., Rochester, N. Y., has purchased Pitmar Corp., Baltimore, manufacturer's representative for processing equipment, it was announced recently by Mercer Brugler, president of Pfaunder. The acquisition was negotiated through an exchange of stock. Pitmar will be operated as a wholly-owned subsidiary of Pfaunder. The Rochester firm manufactures equipment for the handling of liquid products.

—★—

New Fairfield Brochure

A new 20-page, paper bound brochure, describing its "Pyrenone" pesticide compounds, has been published by the Fairfield Chemical Division of Food Machinery and Chemical Corp., New York, it was announced recently by John Rodda, manager. The folder lists physical

and chemical properties and specifications of a variety of "Pyrenone" formulations for use in aerosol and pressurized sprays, household specialties, dairy and livestock sprays and garden and truck insecticides. The brochure also provides complete information on product labeling and "resistant" insects. Copies may be obtained from Fairfield, 441 Lexington Ave., New York 17.

—★—

Cowles Licenses Processes

Cowles Chemical Co., Cleveland, has granted a license covering its processes for the manufacture of "Drymet," an anhydrous sodium metasilicate, and other detergent silicates, to Nightingale Supply Co., Ltd., and its subsidiary Nightingale Silicates Pty., Ltd., Sydney, N.S.W. Australia, it was announced recently.

According to R. F. Huntley, Cowles president, the license also includes processes, formulas and the use of Cowles' trade names covering the firm's complete lines of laundry, metal finishing and food sanitation chemicals. Mr. Huntley added that Nightingale will distribute Cowles' line of industrial chemicals in both Australia and New Zealand.

—★—

Fat Bleaching Booklet

Bleaching of inedible fats with chlorine dioxide is discussed in a new 12-page booklet recently issued by the industrial chemicals division of Olin Mathieson Chemical Corp., Baltimore.

The fully-illustrated brochure describes methods of purifying tallow and other inedible fats and protecting them against deterioration; chlorine dioxide bleaching of tallow by the dry gas and wet methods; and a procedure and equipment for determining the effectiveness of chlorine dioxide as a bleach.

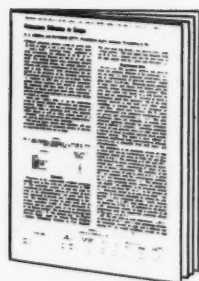
Copies of this bulletin are available on request to the industrial chemicals division of Olin Mathieson Chemical Corp., Baltimore 3.



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For liquid or paste potash soaps, Kasil Potassium Silicates are efficient detergent allies. They increase the sudsing ability of these soaps, they effectively suspend soil, and then prevent the re-deposition of removed soil. Unlike sodium silicates the use of Kasil builders in liquid or soft paste soaps does not materially alter their viscosity.

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News...

PEOPLE • PRODUCTS • PLANTS

Olin Mathieson in Surfactants

* * *

New USDA Insect Repellent

* * *

NSSA Meets in Chicago

* * *

Fight Prison-made Specialties

Ralph A. Hart, formerly president of Colgate-Palmolive International, Inc., has just been named to the newly created position of executive vice-president of Colgate-Palmolive Co., New York. He joined Colgate in 1932 as a salesman, and was named vice-president of the international company in 1953. In 1955 he became president of Colgate International.



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News

Armour Names MacLean

Appointment of Robert B. MacLean as sales manager of the soap division of Armour and Co.,



Robert B. MacLean

Chicago, was announced recently by Paul F. Tevis, division general manager. In his new post, Mr. MacLean will direct sales of the industrial, household and contract soap departments. Mr. MacLean formerly was sales manager of a national food company.

Fels Appoints Slutzky

David H. Slutzky has been appointed Philadelphia district manager of Fels & Co., Philadelphia, it was announced recently. In his new post, Mr. Slutzky will supervise Fels' sales and marketing activities in the Philadelphia metropolitan area, Easton and Bethlehem, Pa., Camden, N. J., and Wilmington, Del.

Uncle Sam Strike Ends

Uncle Sam Chemical Co., New York manufacturer of sanitary chemicals and allied products, resumed production Feb. 18 following a 46-day strike by employees of District 65 of the Retail, Wholesale Department Store Union of the AFL-CIO. The strike ended when the firm's management signed a three-year contract that

will expire in November, 1959.

Herman Schwartz, general manager, stated at press time that the firm expected to catch up with its backlog of orders by March 1. The strike was called Jan. 3 and halted production of Uncle Sam Chemical's complete line of private label and brand name products. The firm is located at 575 W. 131st St., New York 27.

Hammond Joins Lever

Robert G. Hammond has joined Lever Brothers Co., New York, as a copywriter with the promotion services division, it was announced recently by Charles H. Kitchell, manager of the division's copy department. Mr. Hammond previously was associated with Donahue & Coe, Inc. and Roy S. Durstine, Inc., advertising agencies, both of New York.

Vestal Names Doheny

Donald A. Doheny has been appointed to the newly-created position of assistant to the president of Vestal Laboratories, Inc., St. Louis, it was announced recently by Frank J. Pollnow, Jr., president. Prior to joining Vestal, Mr. Doheny was associated with Granco Steel Products Co. as director of administration.

Donald A. Doheny



Johnson Names Three

Three executive appointments were announced recently by S. C. Johnson & Son, Inc., Racine,



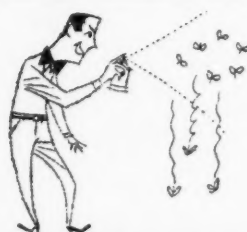
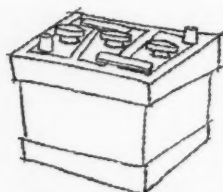
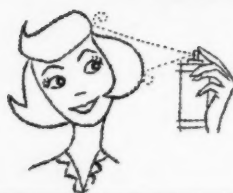
A. O. Fisher

Wisc. A. O. Fisher has been elected vice-president in charge of the international division. Mr. Fisher formerly was household field sales manager. He will be replaced in that post by Russell W. Griffith, who previously had been household products regional manager for the middle Atlantic states. George Franks, formerly household products district manager in New York, has been named to succeed Mr. Griffith.

Franklin Name Change

Franklin Research Co., Philadelphia, recently announced that the name of its all purpose floor cleaner, "Formula 91," will be changed to "Formula 900," effective Mar. 18. According to the announcement, the name change was made necessary because of a conflict with another standard floor cleaner, called "Formula 91," which had been in use for several years. There is no change in formulation of the product. "Formula 900" will continue to be available in pints, gallons, five gallon containers and 55 gallon drums. The five gallon container is equipped with a polyethylene plastic pour spout.

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For Liquid Detergents: Ammonium Hydroxide; *For Toilet Bowl Cleaners:* Muriatic Acid.

Processing—for Glycerine Recovery: Aluminum Chloride Solution, Aluminum Sulfate; *for Sulfonations and Sulfations:* Sulfuric Acid, Oleum, "Sulfan"* (Stabilized Sulfuric Anhydride).

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Greenhouse and Garden Products

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Bleaches

Oxalic Acid, Trisodium Phosphate.

Personal Products

For deodorants & anti-perspirants: Aluminum Sulfate, Iron Free; Aluminum Chloride Solution.

For "Athlete's Foot" preparations: Sodium Thiosulfate (Hypo).

For personal aerosols—Genetron Propellants.*

Automotive Products

For radiator cleaners—Oxalic Acid; *For storage batteries—Electrolyte Sulfuric Acid and Lead Fluoborate Plating Solutions.*

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Colgate Advances Two

Election of Ralph A. Hart to the newly-created position of executive vice-president of Colgate-



Ralph A. Hart

Palmolive Co., New York, was announced late last month by Edward H. Little, board chairman. Mr. Hart formerly was president of Colgate-Palmolive International, Inc. He will be succeeded in that post by George H. Lesch, a vice-president of the parent company.

Mr. Hart joined C-P as a salesman in 1932. He was named vice-president of Colgate-Palmolive

International in 1953 and two years later was named president as well as a vice-president of the parent company. He was elected to the



George H. Lesch

board of directors in 1956.

Mr. Lesch joined C-P in 1932 as a member of the foreign accounting department. In 1948 he was elected vice-president and general manager of the company's subsidiary in Mexico. In 1955 he was named vice-president of Colgate-Palmolive International in charge of sales and advertising in the United Kingdom and Europe.

Jewel Chemical Relocates

Jewel Chemical Corp., Brooklyn, N. Y., manufacturer of private label detergents, polishes and cleaners, has moved to new and enlarged quarters at 747 Belmont Ave., Brooklyn 8, it was announced recently by Dan Morris, general manager. The company formerly was located at 23 Johnson Ave.

At the same time, Mr. Morris announced that Jewel has been appointed exclusive representative of Knight Oil Corp., New York, in the New York metropolitan area and Westchester County. Knight manufactures hand cleaners and automotive specialties.

Home Products Names V.P.

Election of William F. Laporte as a vice-president of American Home Products Corp., New York, was announced recently by

Alvin G. Brush, chairman. Mr. Laporte formerly was president of Whitehall Pharmacal Co., New York, the packaged drug and cosmetic division of American Home Products. He will be succeeded in that post by Elliott A. Bowles, who previously was executive vice-president of Whitehall.

V. Wilbert Haag



Diversey Earnings Higher

Diversey Corp., Chicago, recently reported a rise in income and earnings during 1956. Net income for the year ended Dec. 31 amounted to \$659,494, equal to share earnings of \$2.55. This compared with \$576,856 and \$2.23, in the preceding year.

New Haag President

V. Wilbert Haag has been named president of Haag Laboratories, Inc., Blue Island, Ill., it was announced recently. He succeeds his father, Vernon W. Haag, who now becomes chairman of the board.

The elder Haag, along with H. E. Bigler, founded the company in 1922. V. Wilbert Haag joined the company in 1938 as production manager. He later was named vice-president in charge of production, a position he held until his recent appointment as president. Ralph F. Haag, the youngest member of the family-operated concern, serves as sales manager.

The company also recently announced issuance of a new distributor price schedule on its complete line of synthetic detergents, soaps and waxes. The list describes the price structure for nine categories of Haag products in one, five and 15 gallon pails and 30 and 55 gallon drums. Copies of the price schedule may be obtained from the company at 14000 South Seeley Ave., P.O. Box 114, Blue Island, Ill.

Vernon W. Haag





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NSSA to Meet in Chicago Mar. 31 to Apr. 3

EDWARD McFAUL, nationally known business administrator and speaker, will address the 34th annual convention of the National Sanitary Supply Association to be held at the Conrad Hilton Hotel, Chicago, Mar. 31 to Apr. 3, it was announced recently by Leo J. Kelly, executive vice-president. A trade show featuring supplies and equipment handled by sanitary supply firms will be held in conjunction with the annual meeting.

Mr. McFaul will speak before the first formal convention meeting in the hotel's Williford Room on Apr. 1. In the past, Mr. McFaul has addressed hundreds of business, civic and fraternal organizations. He formerly was chairman of the speech department at DePaul University and a lecturer in advertising at Northwestern University.

Another highlight of the meeting will be the annual report of the educational and public relations committees and presentation of a new strip film on washroom sanitation by W. James Reider, George T. Johnson Co., Medford, Mass.

Jacob Kahn, Windsor Wax Co., Hoboken, N. J., NSSA president, will address the meeting when it first convenes on the evening of Apr. 1. Mr. Reider, NSSA national vice-president, and Mr. Kelly will also address this session. On Tuesday, Apr. 2, at 1:45 p.m., NSSA will elect its national officers, directors and regional vice-presidents. The annual banquet and floor show will be held on the evening of Apr. 2.

The trade show will be open as follows: Sunday, Mar. 31, 9:00 a.m. to 6:00 p.m.; Monday, Apr. 1, 9:00 a.m. to 5:00 p.m.; Tuesday, Apr. 2, 9:00 a.m. to 12 noon; Wednesday, Apr. 3, 9:00 a.m. to 5:00 p.m. Non-members of NSSA will be permitted to visit the exhibit hall all day Wednesday, Apr. 3. About 171 manufacturers and distributors of sanitary chemicals, and application and dispensing equip-

ment will exhibit at booths in the trade show.

NPCA in New Headquarters

The National Pest Control Association on Feb. 15 moved its headquarters from 30 Church St., New York, to a recently purchased building at 250 West Jersey St., Elizabeth, N. J. To be known as the William O. Buettner Memorial Building, after the late executive-secretary of NPCA, who died in September, 1953, the new home was bought partly by contributions to the Buettner Memorial Building Fund and partly from funds of the association. Mr. Buettner, who was himself a pest control operator and the son of one, worked tirelessly to raise standards in the pest control field, of which he was regarded as the industry spokesman. He served as first president of NPCA when the organization was founded in 1933 as the National Association of Exterminators and Fumigators, later becoming secretary and finally executive secretary.

Formal dedication of the new NPCA headquarters is scheduled for May 9, Mr. Buettner's birthday. The association is currently conducting a drive for further funds from its members so that the amount subscribed equals the full purchase price of the build-

ing. A scroll to be mounted in the hall of the building will bear the names of contributors.

Wrisley Sales Higher

Sales and income of Allen B. Wrisley Co., Chicago, increased during the fiscal year ended Dec. 29, 1956, it was announced recently by Wrisley B. Oleson, president. Net sales for the twelve-month period totaled \$6,690,276, as compared with \$5,634,787, in the preceding fiscal year. Net profit in 1956 amounted to \$180,000. This compared with a net loss from operations of \$95,924, in 1955.

Supermarket Show

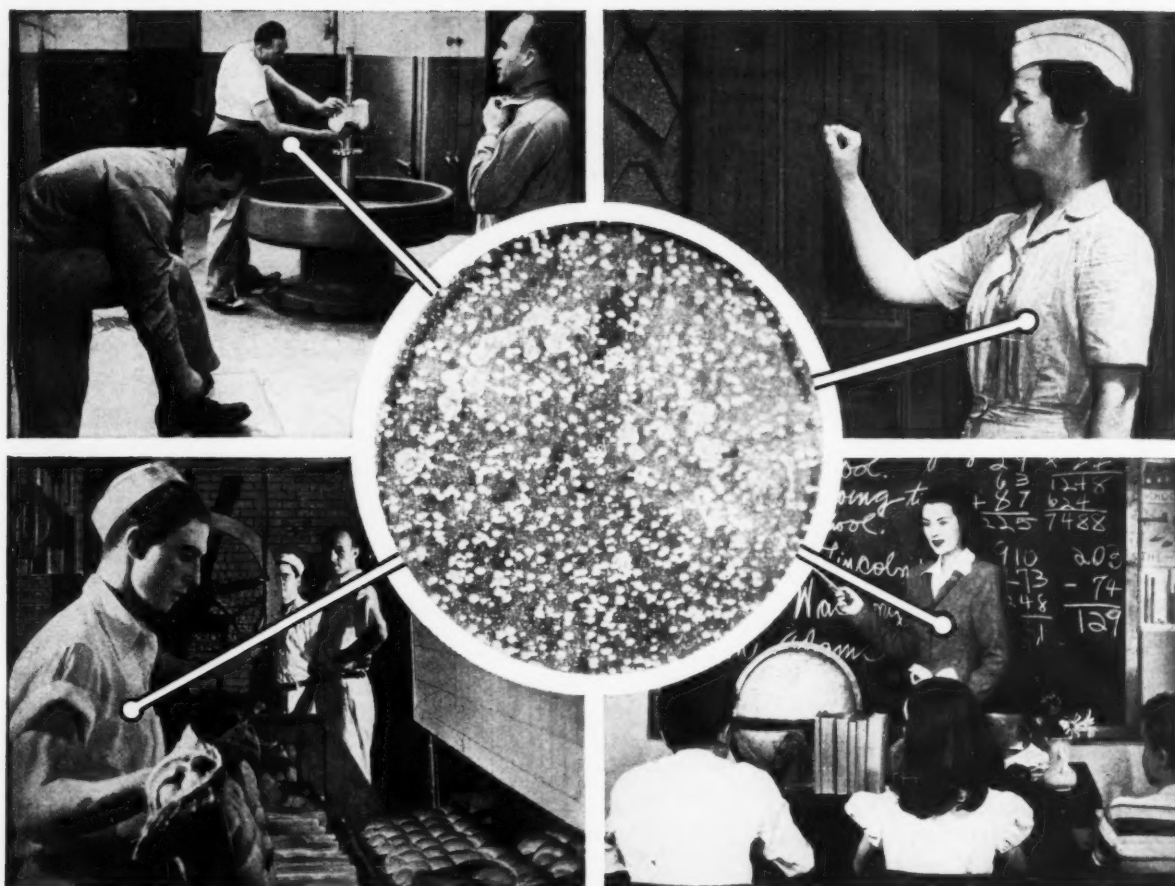
The 4th "Superama" National Supermarket Non-Food Exhibit will be held Aug. 25 through 28 at the Shrine Exposition Hall in Los Angeles. Approximately 300 exhibitors are expected to participate in the event. Exhibits will include cleaning products, health and beauty aids, household appliances, paper specialties, baby needs.

In about 17,000 supermarkets throughout the nation, the non-food divisions accounted in 1956 for more than \$4½ billion sales. Net receipts of the non-food departments account for nearly 25 per cent of total supermarket sales.

Forums and clinics on marketing, packaging, display, advertising, promotions, premiums, inventory, etc., will be held concurrently with the show.

William O. Buettner Memorial Building, new home of NPCA in Elizabeth, N. J.





To fight bacteria more effectively, give your personnel

Cleanliness that clings with G-11[®]

(Hexachlorophene U. S. P.)

Ordinary cleansers remove dirt but leave millions of bacteria on the skin. *G-11* soaps and detergents reduce the bacterial population. Their regular use leaves an anti-bacterial deposit that does not rinse off but stays on the skin day in and day out to provide *cleanliness that clings*.

G-11 is one of the most *effective* ways to protect your people against skin infection—the cause of much costly absenteeism—while helping to prevent contamination of the materials they handle!

Whether your responsibility is a factory, hospital, food plant, school, restaurant or commercial building, you can give your

personnel cleanliness that clings and intensify your attack on skin bacteria with products containing *G-11*.

Hexachlorophene soaps and detergents are non-irritating to the skin and can be used in all types of soap dispensers without fear of corrosion. Ask your supplier for full information.

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Onyx Appoints MacLean

Philip E. MacLean has been named sales manager of the textile division of Onyx Oil & Chemical



Phillip E. MacLean

Co., Jersey City, N. Y., it was announced recently. He succeeds Leon P. Brick, who recently resigned. Mr. MacLean, who joined Onyx in 1947, formerly was New England district manager. In his new assignment, Mr. MacLean will be assisted by Paul Jacobs, former head of the firm's textile application laboratories. Mr. Jacobs joined Onyx about nine years ago and previously had been associated with American Cyanamid Co., New York.

It was also announced that M. S. Schlesinger has been named to head the company's newly-formed technical service section. Mr. Schlesinger formerly served as technical director of Nu-Dye & Finishing Co., Paterson, N. J. Establishment of the new department was in accordance with Onyx's plans for increased production of textile finishing chemicals, including softeners, lubricants and anti-static compounds.

Allied Names Top Execs.

Glen B. Miller has been elected president of Allied Chemical & Dye Corp., New York, it was announced recently by the board of directors. He succeeds Fred J. Emmerich, who has been named chairman of the board.

Mr. Miller has been with Allied since its formation in 1920. He was elected a vice-president in

1950, and has been a director and member of the executive committee since 1953. Mr. Emmerich also joined the company in 1920. He served as comptroller and vice-president before being elected president in July, 1946. During his tenure Allied's activities were broadened considerably. Formerly a manufacturer of basic chemicals, its products now include industrial and laboratory chemicals, ammonia, dyes, plastics, resins, insecticides and building materials. Last year the firm had a net income of \$47,004,945 on sales of \$668,937,533.

The directors also announced the appointment of Carlton Bates, Frank L. Linton and James Sheridan as vice-presidents of Allied. Mr. Bates formerly was president of the Solvay Process Division. He will be succeeded in that post by I. H. Munro. Mr. Linton will continue to serve as comptroller of Allied and Mr. Sheridan will continue as treasurer of the company. Lawrence A. Coleman, head of Allied's legal division since 1951, has been appointed general counsel.

Conrad in New Post

George Conrad has joined Southern California Disinfecting Co., Los Angeles, as vice-president and general manager, it was announced recently by Mrs. Harry Toplitsky, president. The company is a distributor of sanitary supplies and maintenance equipment.

George Conrad



Mrs. Hirsch Formula Pres.

Mrs. Winifred B. Hirsch, widow of the late Jack D. Hirsch, has been named president of Form-



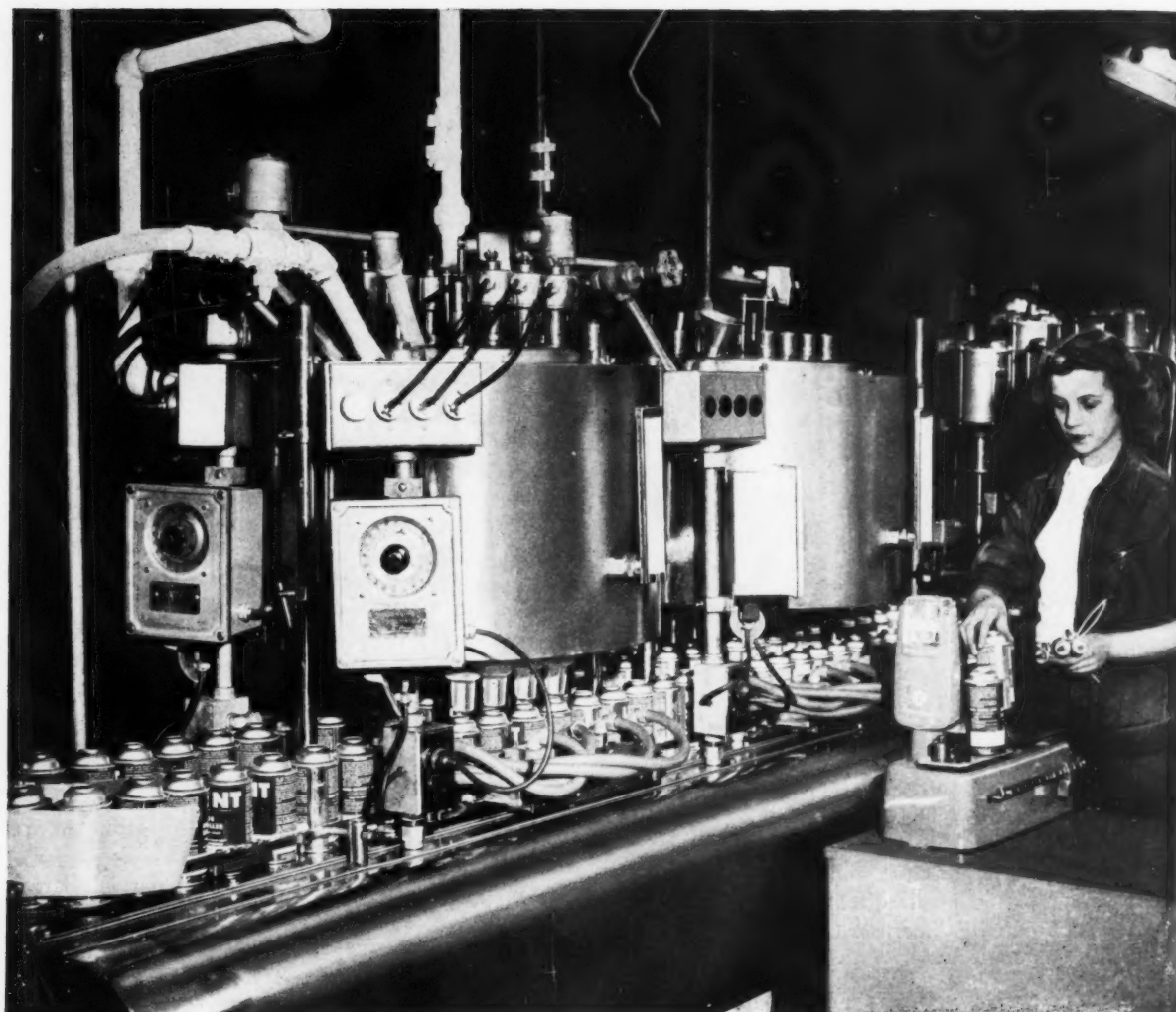
Mrs. Winifred B. Hirsch

ula Floor Products, Inc., Newark, N. J., it was announced recently. Mr. Hirsch, founder and former president of the company, died in January. William R. Fried and Harold P. Lefcourt, who have been with the company since its formation in 1945, will continue as vice-presidents.

One of the nation's largest sanitary supply houses, with an annual volume in excess of one million dollars, Formula occupies a 42,000 square foot plant at 99 Frelinghuysen Ave., Newark. The company has branches in Trenton, Philadelphia, Bridgeport and New York.

New Dunham Detergent

A new granular detergent, designed for cleaning processing and storage tanks, was introduced recently by Dunham Chemical Co., a subsidiary of National Cylinder Gas Co., Chicago. Called "Planisol," the new chemical, when dissolved by hot water, forms a solution that may be applied to any tank, regardless of its prior contents. The solution may be recirculated from one tank to another. According to G. R. Stewart, vice-president of Dunham, "Planisol" cuts the cost of tank cleaning and has received Department of Agriculture clearance for use in meat packing plants.



Contract Filling that will satisfy you... the buying public, too

When we do contract filling (liquid, pressurized or aerosol) for you, we act as a division of your own company. Exact formulation is supervised by skilled chemists.

The most modern equipment obtainable, operated by highly trained technicians, fills accurately; doesn't overfill or underfill.

No waste, but full measure for your customers. Neatness and performance of package is checked by our rigid quality control system. Establish "your own" filling department with us now. Write, 'phone or wire...

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Olin Mathieson to Make Surfactants

THE industrial chemicals division of Olin Mathieson Chemical Corp., Baltimore, recently announced plans to enter the non-ionic surfactants field. The company will manufacture a new line of non-ionic surface active agents for general industrial use which it will market under the name of "Poly-Tergent."

According to the announcement, Olin Mathieson will initially offer four members of the "Poly-Tergent" series with others to follow soon. All of the first group are alkyl phenol polyglycol ethers.

"Poly-Tergent B-200," designed for use as an auxiliary emulsifier, is dispersible in water and miscible in all proportions with many organics. The second member of the new line, tradenamed "Poly-Tergent B-300," possesses outstanding properties as a wetting agent, detergent, emulsifier and dispersant. It is completely soluble in water up to temperatures of 52-56° C. and in some organic solvents. A detergent for fibers and fabrics as well as hard surfaces, "B-300" can be utilized alone or in combination with mild alkaline builders. The product is also suitable for use in the formulation of detergent sanitizers for dairy cleaning and general industrial cleaning.

"Poly-Tergent G-200," the third member of the group, is miscible with most organic solvents but is only slightly soluble in water.

It is designed for use as an emulsifying agent and as an auxiliary emulsifier with more hydrophilic non-ionics. In the latter capacity it is useful in solvent type industrial cleaners. In addition, "G-200" can be utilized as an additive in dry cleaning solvents.

The fourth product of the new series, "Poly-Tergent G-300," is for use as a wetting agent, detergent or dispersant. It is completely soluble in water up to 62-70 degrees centigrade and in a number of organics. The product has good foaming characteristics and can be used in combination with many foam stabilizers. "G-300" is also suitable for use with mild alkalies, abrasives, brighteners and foam builders. It is said to improve the detergent and wetting properties of formulations employed in laundering, metal cleaning, floor cleaning, dishwashing and general sanitizing.

William H. Burkhart, center, president of Lever Brothers Co., New York, congratulates John X. Garvey, area sales manager of the Wilkes-Barre Unit, which won the Lever President's Trophy in the company's national "Going Places" contest. The unit operates as a local branch of the company's Philadelphia district sales office. Shown, l. to r.: Warren N. Burding, marketing vice-president of the Lever Division; Joseph E. Kelly of Scranton, John W. Cullen of Hazelton, Leonard R. Novack of Sunbury, Mr. Burkhart, Mr. Garvey, Thomas J. Ford of Scranton, Philadelphia district manager Herman L. Wineke and Paul C. Daniels of Wilkes-Barre.

The national competition within the Lever Division was based on the percentage of sales vs. quota, with each member of the winning unit earning a 10-day all-expense-paid vacation trip for two, in addition to \$250 and a sterling President's Trophy.

All of the new "Poly-Tergents" are available in tank car lots and in five and 55 gallon drums.

—★—

New Insect Repellent

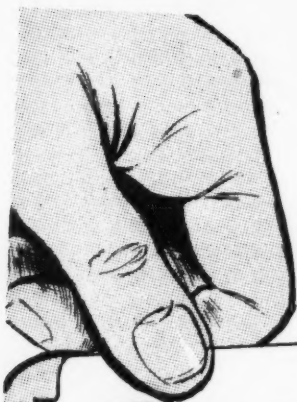
A new and more effective insect repellent will be introduced this spring according to an announcement made early this month by the U. S. Department of Agriculture. The new liquid repellent is diethyl toluamide. In solution, the compound may be applied to skin or clothes for protection against at least five insect pests: mosquitoes, ticks, chiggers, fleas, and flies. Of non-greasy lotion-like consistency, and having a pleasant fragrance, the repellent is said to resist rubbing or wearing off, so that one application lasts several hours.

Synthesized some years ago by U. S. Department of Agriculture research chemists, diethyl toluamide has undergone testing at the department's entomology laboratory at Orlando, Fla. It was rated better than any other chemical or combination of chemicals against mosquitoes, best against several kinds of biting flies, and highly effective against fleas, ticks and chiggers. Safe to apply to the skin and harmless to fabrics, the repellent may be incorporated in dry-cleaning preparations for the treatment of clothing or may be applied to clothing in the form of an emulsion. At least one firm is reported interested in manufacturing the repellent under license to U.S.D.A.



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ORVUS AB GRANULES

A neutral synthetic detergent, wetting and emulsifying agent of the 40% active sodium alkyl aryl sulphonate type. A white, readily soluble free-flowing light granule, it can be used effectively in the blending of bubble baths, car washes, dishwashing compounds, dairy cleaners, insecticides, laundry detergents, rug and upholstery cleaners, and general maintenance cleaners.

ORVUS WA PASTE

A neutral synthetic detergent and wetting agent whose active ingredient is mainly sodium alkyl sulphate. Orvus WA has excellent sudsing, wetting, emulsifying, dispersing and penetrating properties which are well suited for paste and liquid shampoos, bubble baths, liquid detergents, liquid car washes, liquid floor cleaners, insecticides, glass cleaners, rug and upholstery cleaners and for many other liquid cleaners.

AMBER GRANULES

A neutral 88%, 42° titer-type soap of exceptional purity and uniformity. Well suited for the preparation of paste or gel-like products because of its high titer. Its granular form makes it ideal for powdered products. Excellent for the preparation of hand cleaners, paste cleaners, polishes, lubricants and coatings.

Kyro EO

A neutral nonionic synthetic detergent of the 100% alkyl-phenol ethylene oxide condensate type. A light-colored liquid with a clean, pleasant odor. Its superior detergent, wetting and emulsifying properties, plus its compatibility with a wide variety of other products, offer excellent performance in liquid detergents, sanitizer detergents, self emulsifying solvents, automatic laundry detergents, glass cleaners, insecticides, textile cleaners, dairy cleaners and bottle washing compounds.

IVORY BEADS

A medium titer, neutral white soap of exceptional purity and quality. Well suited for compounding products where a mild but effective soap is required—hand soaps, paints, polishes, protective creams, dishwashing compounds and paper coatings.

ORVUS K LIQUID

A modified, highly concentrated ammonium lauryl sulphate—modified for increased sudsing and mildness. Exceptionally low cloud and pour points. Highly fluid and easy to handle. Ideal for clear liquid shampoo and liquid detergents where high foaming is required.

ORVUS ES PASTE

A specially developed synthetic detergent whose active ingredient is mainly modified alkyl sulphate. Offers exceptional efficiency and stability over a wide range of operating conditions. The product's detergent, wetting, penetrating, sudsing, dispersing and emulsifying properties make it excellent for the preparation of liquid shampoos, bubble baths, liquid detergents, liquid floor cleaners, insecticides, car washes, emulsion cleaners, and a wide variety of other products.

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BULK SOAP SALES DEPARTMENT, CINCINNATI 1, OHIO

SOAP and CHEMICAL SPECIALTIES

Roy E. Moore Dies

Roy E. Moore, 82, president and treasurer of Moore Brothers Co., New York manufacturer of



Roy E. Moore

soap dispensers, died Feb. 9 in Rahway, N. J. Hospital of a cerebral hemorrhage.

The firm headed by Mr. Moore was founded by his father, Samuel G. Moore, for the manufacture of cake soap in Seneca, Kans., in the late 1800's. At the time Mr. Moore and his three brothers worked for their father in the soap firm. Later the firm was moved to San Francisco, and in 1895, Moore Brothers shifted its headquarters to Brooklyn. A few years afterwards the firm discontinued manufacturing cake soap and sold sanitary supplies. It was one of the first companies in the United States to make floor scrub soaps. Eventually, Moore Brothers moved to Manhattan to specialize in the manufacture of soap dispensers and soap dispensing systems.

Since 1907 Mr. Moore had been interested in gymnastics and at his death was vice-president of the International Amateur Gymnastics Federation and chairman of the Olympic, National Amateur Athletic Union and Metropolitan AAU gymnastics committees. As an active gymnast he won his first national gymnastic crown in 1907, and from 1920 to 1932 served as manager and coach of the U.S. Olympic gymnastic teams.

Surviving Mr. Moore are a

daughter, Mrs. John R. Kane of Rahway, N. J.; a sister, Mrs. Mabel Hearon of Schenectady, N. Y., a brother, Earl T. Moore of Brooklyn, who retired from Moore Bros. 10 years ago and a granddaughter, Kathy Kane.

Elected to succeed Mr. Moore as president and chairman of Moore Brothers Co. is his daughter, Mrs. John Kane. Martin J. Peters remains as vice-president, and John Kane, secretary, becomes vice president and treasurer. Miss Ethel Protzman, with the firm for over 30 years, becomes secretary. John D. Sullivan is assistant treasurer.

—★—

Richard Hillier Dies

Richard Van Saum Hillier, who retired last year as sales executive of S. B. Penick & Co., New York, died on Feb. 9 at his home in Lancaster, Pa., after a long illness. He was 61 years old. Mr. Hillier joined Penick in 1931 after it had acquired George R. Hillier & Sons, makers of drugs and fine chemicals. He had been associated with Hillier since 1914.

—★—

Selig Names Printz

Richard D. Printz has been named assistant sales manager of Selig Co., Atlanta, Ga., it was announced recently by Simon S. Selig, Jr., president. In his new position, Mr. Printz will headquarter in Atlanta and assist Alvin Hamburger, general sales manager. Mr. Printz formerly was associated with Robert Palmer Corp. as southern regional sales manager.

Richard D. Printz



Brick Forms New Firm

Formation of Intex Chemical Corp., Lodi, N. J., was announced recently by Leon P. Brick,



Leon P. Brick

president and founder of the new firm. Intex, which is now completing organization of its research, technical service, production and sales staffs, will have its main offices and plant at 167 Main St., Lodi. Mr. Brick formerly was executive vice-president of Onyx Oil & Chemical Co., Jersey City, N. J. He had been associated with Onyx for 30 years. Previously he had served with E. I. du Pont de Nemours & Co., Wilmington, Del. The new concern will manufacture a complete line of industrial and textile chemicals and will maintain offices and plant at the Main St. address.

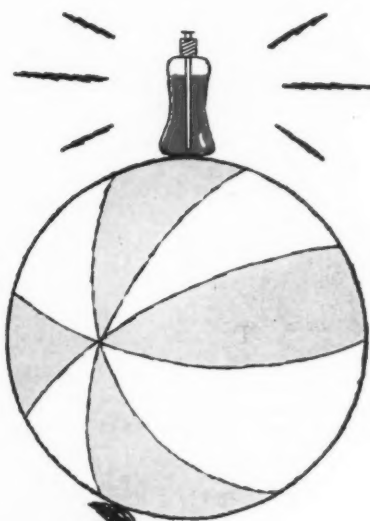
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Guenther to Lecture

Ernest Guenther, vice-president and technical director of Fritzsche Brothers, Inc., New York, will present a series of three lectures in Canada during April, it was announced recently. All three lectures will feature "Production of Essential Oils in Europe and North Africa" as the principal topic and will be accompanied by color films. Dr. Guenther will speak before the Canadian Food Technologists on Apr. 9, at McGill University, Montreal. The following evening he will address the National Research Council at Ottawa, and on Apr. 15 he will talk before the Cereal Chemists of Canada at the auditorium of Lever Brothers, Ltd., Toronto.



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Record Soap Sales in 1956

Sales of soaps and synthetic detergents in 1956 hit an all time high. They exceeded the 1955 annual sales by 8.4 per cent with synthetic detergents now accounting for 67 per cent of the market. Combined sales of soaps and synthetics in 1956 amounted to 3,975,439,000 pounds, synthetics alone to 2,690,327,000 pounds, an increase of 16.1 per cent over 1955, according to the quarterly report issued last month by the Association of American Soap and Glycerine Producers, New York.

Liquid synthetics continued their rapid growth with sales increased by 69.7 per cent to 259,656,000 pounds in 1956. Total soap sales are down 4.8 per cent, with liquid soaps 15.2 per cent below the 1955 figure.

All types of shampoos showed decreased sales, with soap shampoos down 62.5 per cent to 1,312,000 pounds and detergent

shampoos off 14.1 per cent to 23,564,000 pounds.

Sales of shave products dropped in 1956, shaving soap by 3.9 per cent to 3,581,000 pounds and shave cream by 8.9 per cent to 15,476,000 pounds.

—★—

Murlan J. Murphy Dies

Murlan J. Murphy, 70, president of Murphy-Phoenix Oil Co., Cleveland, died on Feb. 15 in that city. Mr. Murphy had been with the company, which was founded by his father, the late Jeremiah T. Murphy, for 45 years and had been president for the past 26 years.

—★—

Entomologists Meet

The 21st annual meeting of the Georgia Entomological Society will be held at Rock Eagle 4-H Camp near Eatonton, Ga., on Mar. 19 and 20. Reservations may be obtained by contacting Dr. C. R. Jordan, Extension Entomologist, University of Georgia, Athens, Ga.

Epstein Forms New Firm

Formation of Sole Chemical Co., 27 East Monroe St., Chicago 3, was announced recently by Solo-



Solomon Epstein

mon Epstein, founder and president of the new firm. Mr. Epstein formerly was executive vice-president and general manager of Emulsol Chemical Corp., Chicago.

The newly-founded concern will specialize in marketing of chemical specialties, including detergents, emulsifiers, germicides, foamers and other surface active agents. General offices and laboratories will be located at the Monroe St. address.

—★—

Home Products Income Up

Net income of American Home Products Corp., New York, last year rose to \$31,250,355 from \$20,536,619 in 1955. The 1956 income was equal to share earnings of \$8.14 on 3,840,785 shares outstanding, compared with share earnings of \$5.43 on 3,846,279 shares, in 1955.

—★—

West Sales Increase

Sales of West Disinfecting Co., Long Island City, N. Y., showed a slight increase for the year ended Nov. 30, it was announced recently. Net sales for the 12-month period totaled \$20,155,000, as compared with \$18,885,000, in the preceding year. Net income, however, fell to \$650,000, equal to share earnings of \$1.48, from \$694,000 and \$1.58, in 1955.

Soap and Detergent Sales for 1956

	Year 1956		4th Quarter of 1956	
	pounds	dollars	pounds	dollars
Soaps other than liquid.....	1,251,224,000	308,616,000	288,191,000	72,842,000
Liquid soaps	33,888,000	7,475,000	7,632,000	1,686,000
Total	1,285,112,000	316,091,000	295,823,000	74,528,000
Bar toilet soaps, including mechanics	506,156,000	160,249,000	116,374,000	38,214,000
Yellow and other than white laundry bars	55,791,000	6,454,000	14,692,000	1,659,000
White laundry bars	168,020,000	30,174,000	36,573,000	6,522,000
Soap chips and flakes, pkgd..	60,003,000	16,939,000	14,028,000	4,010,000
Soap chips and flakes, bulk..	105,962,000	12,344,000	26,608,000	3,106,000
Soap, granulated, sprayed, pkgd.	194,529,000	48,742,000	39,396,000	10,362,000
Soap, granulated, sprayed, bulk	90,847,000	10,526,000	22,618,000	2,674,000
Washing powders, pkgd.....	3,833,000	383,000	773,000	76,000
Washing powders, bulk.....	15,706,000	1,292,000	4,035,000	336,000
Hand pastes	6,718,000	865,000	1,983,000	260,000
Hand powders	7,961,000	1,326,000	1,934,000	320,000
Paste and jelly soaps.....	14,997,000	2,009,000	3,514,000	463,000
Shaving soaps	3,581,000	2,447,000	872,000	650,000
Shaving creams	15,476,000	14,579,000	4,423,000	4,142,000
Liquid soaps, other than pkgd. shampoos	4,072,000*	6,208,000	627,000*	927,000
Soap shampoo, liquid, pkgd...	164,000*	1,267,000	40,000*	362,000
Misc. or other soaps.....	1,644,000	287,000	368,000	48,000
Detergents, solid	2,430,671,000	494,472,000	561,036,000	112,976,000
Detergents, liquid	259,656,000	102,969,000	64,784,000	23,825,000
Total	2,690,327,000	597,441,000	625,820,000	136,801,000
Detergents, solid, other than shampoo, pkgd.	2,153,474,000	460,493,000	479,156,000	104,628,000
Detergents, solid, other than shampoo, bulk	261,921,000	24,291,000	79,609,000	6,897,000
Detergents, liquid, other than shampoo, pkgd.	26,512,000*	84,475,000	5,670,000*	18,460,000
Detergents, liquid, other than shampoo, bulk	4,909,000*	6,057,000	2,213,000*	2,735,000
Detergent shampoos, liquid...	8,288,000	12,437,000	1,720,000	2,630,000
Detergent shampoos, solid....	15,276,000	9,688,000	2,271,000	1,451,000

*Expressed in gallons

I. Schneid, Inc. Relocates

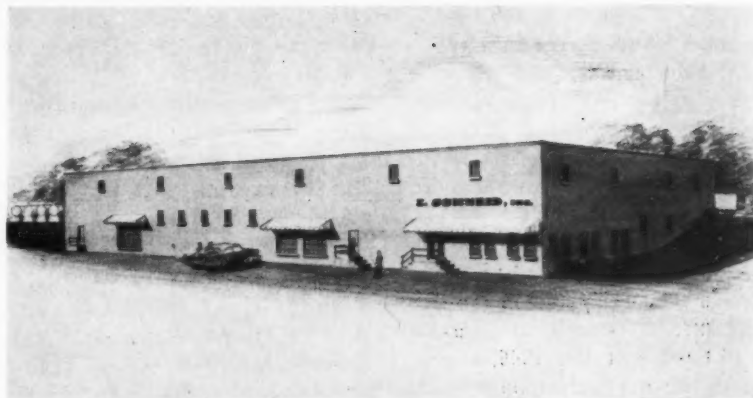
I. Schneid, Inc., manufacturers of building maintenance equipment and sanitary supplies, has moved to a newly constructed building at 765 Trabert Ave., N.W. Atlanta, Ga., it was announced recently. The firm formerly was located at 916 Ashby St., N.W. According to I. Schneid, president, the new building is equipped with the latest manufacturing, handling and storage facilities, which are designed to increase production capacity and expedite shipments to jobbers.

—★—

"Ludox" Shipped to Calif.

The first tank car shipment of "Ludox" to the west coast was received last month by Columbia Wax Co., Glendale, Calif., it was announced recently by C. H. Richardson, director of marketing. "Ludox" is a colloidal silica, used as an anti-slip ingredient for floor waxes. It is made by the Grasselli Chemicals Dept. of E. I. duPont de Nemours & Co., Wilmington, Del. According to the announcement, Columbia is also approaching the completion of an expansion program designed to double the capacity of its Glendale plant. New facilities at the plant include modern, continuous flow processing equipment and underground tanks

Warren F. Haverkamp, director of research and development, Columbia Wax Co., and Norman Mitchell, quality control analyst, take lab samples from first West Coast tank car shipment of "Ludox" on arrival of shipment from east. Looking on at left are C. H. Richardson, Columbia's director of marketing, and George Yates, Jr., production manager, Columbia. Representatives of Braun Corp., West Coast distributors for Grasselli Chemicals Department of du Pont, watching test at right include: Fred H. Kienzie, sales representative, W. M. King, industrial chemical department sales manager, and G. E. Sinclair, new products development manager.



New plant of I. Schneid, Inc., 765 Trabert S., N.W., Atlanta, Ga. chemical specialties firm.

for storing tank car shipments of raw materials.

—★—

New Wax Sales Standards

Two resolutions establishing specifications for "pure" and "technical" or "modified" grades of refined wax have been passed and approved by the membership of the American Wax Importers and Refiners Association. The specification for a "pure" refined wax calls for a material that "when delivered, will be 100 per cent pure . . . free of extenders or admixtures of any nature . . . and that no substance will be added that will pass through a filter press or other refining processes, and that no materials will be added thereafter to same, and that the wax must conform to the

Association's specifications governing same."

The resolution calling for quality standards for "pure" refined wax also states that "all containers or packages must be marked 'pure refined', and the wax must be sold, contracted, and invoiced as such".

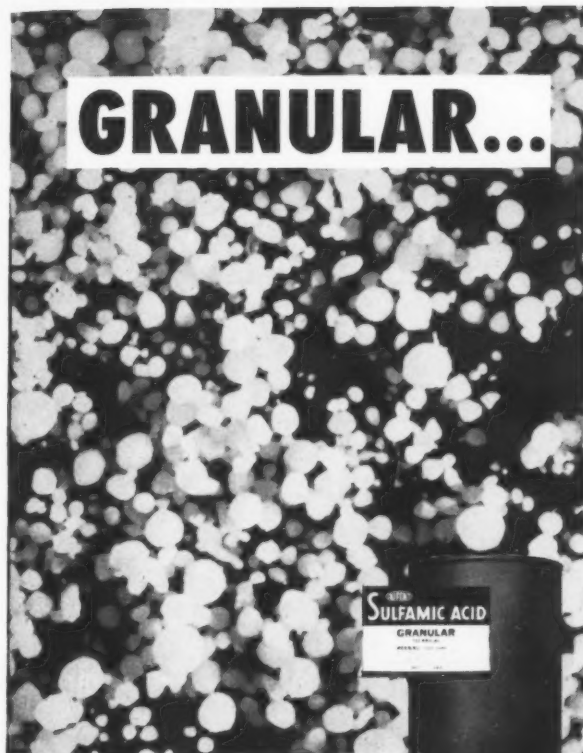
The second resolution, establishing a standard for wax blends provides: ". . . that any wax which is blended with other substances, prior to or after refining, must be sold as a technical or modified grade, and/or under a code name or number, and clearly designated to the buyer that it is not a pure grade of wax, and the containers or packages must be marked accordingly, and this wax must be sold, contracted and invoiced as such." The resolution further states that: "If any member of this Association is instructed by a buyer of this grade of wax to place a code name, number, or brand name on packages or containers, the seller may comply with said instructions. However, the word 'pure' may not be used, nor can said wax be offered or sold as a pure refined wax to conform with the American Wax Importers & Refiners Association's specifications".

—★—

BIMS Anniversary Dinner

BIMS of New York celebrated its 25th anniversary on Feb. 28 at a dinner party held at the Waldorf-Astoria Hotel, New York. Many members of BIMS of Boston attended the affair.

GRANULAR...

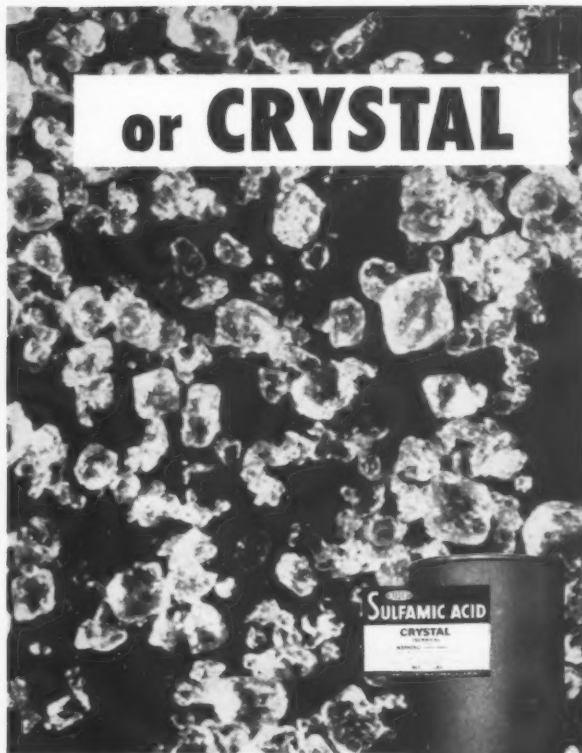


MAGNIFIED EIGHT TIMES

GRANULAR GRADE. A new, free-flowing, non-caking Sulfamic Acid best suited for use in cleaning compounds.



or CRYSTAL



MAGNIFIED EIGHT TIMES

CRYSTAL GRADE. 99% active material for synthesis and chemical uses where high purity is required.



DU PONT SULFAMIC ACID...the key to effective, easy-to-handle cleaning compounds and scale removers

Now you can produce acid cleaners that dissolve tough scale deposits quickly yet have low corrosive action—using granular or crystalline Sulfamic Acid. Cleaning compounds based on Sulfamic Acid handle a variety of difficult cleaning jobs—from copper kitchen pans to industrial vacuum pans. They do the job fast, safely, economically, and without fumes.

In addition, breakage and special-handling problems are eliminated because Sulfamic Acid is packed in lightweight, space-saving, disposable fiber drums.

WRITE TODAY for our new general information bulletin describing Sulfamic Acid and its applications in industrial cleaning... also our new brochures on Sulfamic-based cleaners for air conditioning equipment and Sulfamic Acid for scale removal in marine equipment.

SULFAMIC-BASED FORMULATIONS ARE BEING USED TO CLEAN:

Automatic Dishwashing Machines	Copper-Bottom Pans
Sugar Evaporators	Industrial Boilers
Food-Processing Equipment	Heat Exchangers
Dairy Equipment	Ice-Making Machines
Brewery Equipment	Cooling-Tower Systems
Marine Evaporators	Evaporative Condensers
& Heat Exchangers	Engine Jackets
Paper-Mill Felts and Wires	Ion-Exchange Resins

DU PONT
SULFAMIC ACID



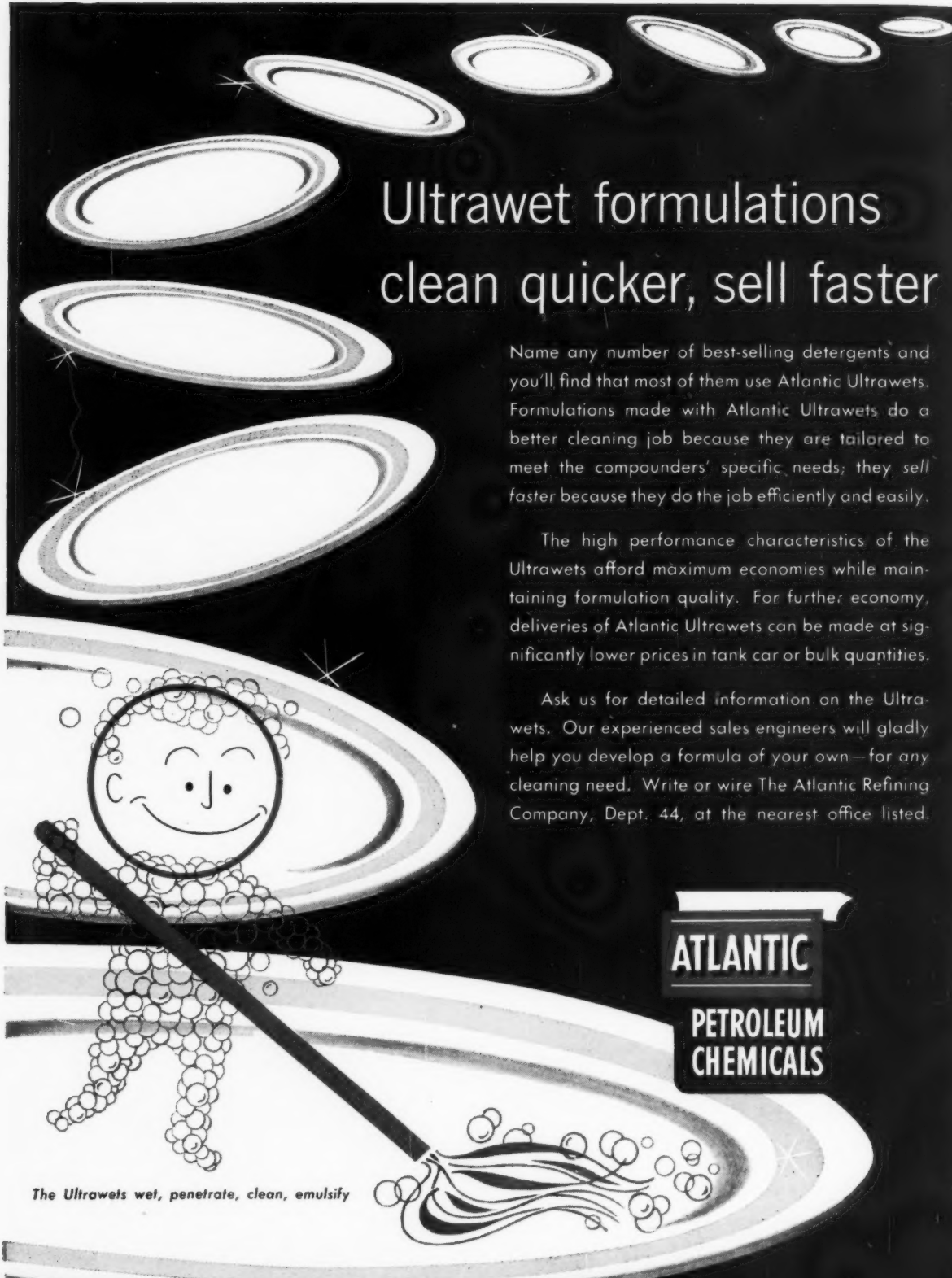
Better Things for Better Living... through Chemistry

E. I. du Pont de Nemours & Co. (Inc.)
Grasselli Chemicals Dept., Room N-2539
Wilmington 98, Delaware

Please send me: ☐ Brochure on marine cleaning
☐ Brochure on air conditioning equipment cleaning
☐ Sulfamic Acid general information bulletin

Name _____ Position _____
Firm _____
Address _____
City _____ State _____





Ultrawet formulations clean quicker, sell faster

Name any number of best-selling detergents and you'll find that most of them use Atlantic Ultrawets. Formulations made with Atlantic Ultrawets do a better cleaning job because they are tailored to meet the compounders' specific needs; they sell faster because they do the job efficiently and easily.

The high performance characteristics of the Ultrawets afford maximum economies while maintaining formulation quality. For further economy, deliveries of Atlantic Ultrawets can be made at significantly lower prices in tank car or bulk quantities.

Ask us for detailed information on the Ultrawets. Our experienced sales engineers will gladly help you develop a formula of your own—for any cleaning need. Write or wire The Atlantic Refining Company, Dept. 44, at the nearest office listed.

ATLANTIC

**PETROLEUM
CHEMICALS**

The Ultrawets wet, penetrate, clean, emulsify

Philadelphia, Providence,
Charlotte, Chicago

In the West
L. H. Butcher Co.

In Canada Naugatuck Chemicals
Division of Dominion Rubber
Company, Ltd.

In Europe
Atlantic Chemicals S.A.B.
Antwerp, Belgium

In South America
Atlantic Refining Company
of Brazil, Rio de Janeiro

Lever Names Underwood

Appointment of Raymond F. Underwood as director of sales development for Lever Brothers



Raymond F. Underwood

Co., New York, was announced recently by Milton C. Mumford, executive vice-president. Mr. Underwood formerly was general sales manager of the firm's Lever division. He is succeeded in that post by Hugh R. Conklin, who previously had been national sales manager of the Post Cereals division of General Foods Corp., White Plains, N. Y.

Mr. Underwood has directed the sales of Lever soaps and detergents since 1953. He joined the company two years earlier as sales vice-president of the "Pepsodent" division. Previously he had been director of sales for Kawneer Co., Niles, Mich., and sales manager of Shell American Petroleum Co., Kokomo, Ind.

Hugh R. Conklin



Prior to joining Lever, Mr. Conklin had held various technical and marketing posts with General Foods. He joined the company in 1933 as an engineer and subsequently became manager of the firm's eastern regional sales division.



Emery Names Leech

Paul N. Leech has been named sales representative in the middle Atlantic states for Emery Industries, Cincinnati, it was announced recently by G. W. Boyd, sales manager of fatty acids. In his new post, Mr. Leech will represent Emery's line of fatty acids in Pennsylvania, northern New Jersey, western Maryland and central New York state. Prior to joining Emery, Mr. Leech was a sales representa-



Paul N. Leech

tive for M&R Dietetic Laboratories in Toledo, O.



Durez Names Searer

Appointment of Jay C. Searer as works manager of Durez Plastics Division of Hooker Electrochemical Co., Niagara Falls, N. Y., was announced recently by Bjarne Klaussen, Hooker president. Dr. Searer formerly was production manager of the division. In his new assignment, Dr. Searer will supervise operation of the firm's main plastics plant at Tonawanda, N. Y. and the phenolic molding compounds plant at Kenton, O. He will headquarter at the Tonawanda unit.

Shulton Names Peters

Appointment of Franklin T. Peters as assistant manager of the fine chemicals division of Shulton,



Franklin T. Peters

Inc., Ciltton, N. J., was announced recently by Richard E. Brainard, vice-president of the fine chemical division. Dr. Peters formerly was market development manager of Heyden Chemical Corp., New York. Previously he had been associated with Glyco Products Co., New York, as a district sales manager, and E. I. du Pont de Nemours & Co., Wilmington, Del., as a research supervisor.



Geigy Names Findlan

J. C. Findlan has been named sales manager of the Geigy Industrial Chemical Division of Geigy Chemical Corp., Ardsley, N. Y., it was announced recently by H. W. Zussman, division president. Since 1953, Mr. Findlan had been a field

J. C. Findlan





NO TIME FOR SPELLBINDERS!

Extravagant talk . . . idle promises . . . these may still impress some listeners, but for the successful business executive, concrete performance is the thing that counts. *Performance* based upon many years of practical experience in the fragrance field, is what we at FRITZSCHE BROTHERS offer every customer. Each problem submitted us receives the special attention of

an expert with whom the manufacturer's specific requirements and limitations (of cost), if any, are first thoroughly discussed. Whatever laboratory work is needed is then carried forward and when all conditions have been satisfied, our recommendations—with samples—are submitted for the customer's evaluation and approval. This procedure applies equally, whether the problem involves high grade perfume or low cost technical odorant. We strive to give the *best performance possible* under the various conditions imposed, and on this basis we invite your patronage.

—ALWAYS DEPENDABLE—
ODORANTS and DEODORANTS
for INDUSTRIAL and
TECHNICAL USE

▲
MADE-TO-ORDER FRAGRANCES
for PERFUMES, TOILETRIES
and COSMETICS

▲
SUPPLIERS of
AROMATIC CHEMICALS,
BASIC PERFUME and
FLAVOR RAW MATERIALS

FRITZSCHE

Established



1871

Brothers, Inc.

PORT AUTHORITY BUILDING, 76 NINTH AVENUE, NEW YORK 11, N. Y.

BRANCH OFFICES and *STOCKS: Atlanta, Georgia, Boston, Massachusetts, *Chicago, Illinois, Cincinnati, Ohio, *Los Angeles, California, Philadelphia, Pennsylvania, San Francisco, California, St. Louis, Missouri, Montreal and *Toronto, Canada and *Mexico, D. F. FACTORY: Clifton, N. J.

representative for Geigy in the east central and southern states. Previously he had been associated with Armour Laboratories, Chicago, where he served in that company's research and product development departments, and with the Westvaco Chemical Division of Food Machinery and Chemical Corp., New York, where he was a district sales manager.

Packer to Expand

Packer Machinery Corp., Brooklyn, is contemplating the addition of new types of allied equipment to its present line of fillers, it was announced recently by Bernard Misbin, president. Packer recently moved to a newly constructed plant at 109 14th St., Brooklyn, from its former location at 30 Irving Place, New York City. The new plant, according to Mr. Misbin, provides enough space to facilitate increased production needs to fill all orders.

"We found that with the space available in our old plant we were hampered in our production schedule on liquid filling equipment," Mr. Misbin said. The building of the new plant is part of a major expansion program being put into effect by Packer because of the great increase in sales over the past few years.

Packer was founded in 1945 by Mr. Misbin. Sales manager for the firm is Robert Feldman.

Oppose Prison-Made Goods

Several of the nation's sanitary supply distributor and manufacturers' organizations have joined forces in an attempt to block proposed legislation in North Carolina which would compel state tax-supported institutions to buy prison-manufactured sanitary chemicals and related products. The proposed bill is scheduled to be introduced at the current session of the North Carolina General Assembly, according to J. H. Anderson, president of the Carolina Sanitary Supply Association.

In an effort to aid the North Carolina manufacturers and job-



I. L. Eskenazy, standing, left, who presided at recent sales meeting of Adell Chemical Co., manufacturers of "Lestoil" liquid detergent. Others who attended the meeting included, seated, l. to r., these sales representatives: Herbert Goldstein, Connecticut; John Cadalso, upstate New York; Abraham Nathanson, Holyoke, Mass., home office representative; Albert Lacroix, Maine, and Aaron L. Kingsberg, president, Jackson Associates, Holyoke advertising agency for Adell. Standing left to right: Mr. Eskenazy; Joseph O'Donnell, Philadelphia; Lewis Leonard, New Jersey; Melvin Kahn, Boston; John Hall, Rhode Island and David Shavell, New York City.

bers, the National Sanitary Supply Association recently held a meeting of its board of directors in Atlanta, Ga. At this meeting, which also was attended by representatives of many southern sanitary supply concerns, the NSSA board recommended that a program be developed to assist members in states where legislation compelling institutions to purchase prison-made goods appears imminent. At the same time the board appealed to members in other parts of the country to notify NSSA headquarters whenever similar legislation is planned.

Earlier this year the CSSA held a meeting at Raleigh, at which time its members adopted a number of resolutions, including a request to the Chemical Specialties Manufacturers Association to lend its support and assistance in behalf of the CSSA. The CSMA has referred the matter to its executive committee where it presently is being studied.

Correction

A double felony was committed in last month's issue of *Soap and Chemical Specialties* when it was incorrectly reported that E. Eskenazy, of Felton Chemical Co., Brooklyn, N. Y., had been transferred to the firm's Los Angeles branch. Mr. Eskenazy's correct first initial is "S" and his title at Felton is that of perfume chemist.

Pilot Chem. Changes Name

Pilot Chemical Co., Los Angeles, has changed its name to Pilot California Co., it was announced recently. According to John Morrisroe, president and general manager, the firm's general offices and plant will remain at 215 West 7th St., Los Angeles 14. No changes in personnel or company policy are contemplated.

New Lquisan Plant

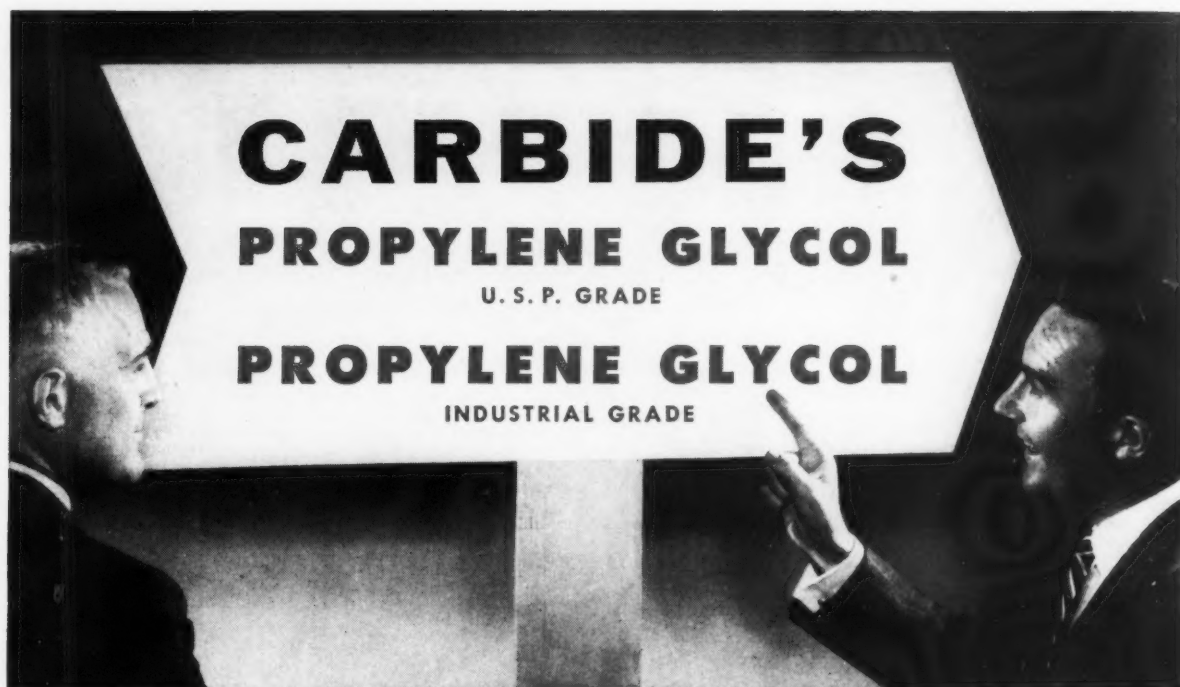
Liquisan, Inc., Chicago, has purchased a new plant in El Monte, Calif., for manufacture of its complete line of sanitary chemicals, it was announced recently by Jack Kearns, president. Construction of the new building, which contains 10,000 square feet of floor space, is expected to improve service throughout the western states.

G. F. Adamson Dies

George F. Adamson, 82, retired treasurer of Colgate-Palmolive Co., New York, died Feb. 7 at his home in Coral Gables, Fla., after a long illness.

Mr. Adamson retired in 1943 after 54 years of service with C-P. He joined the firm at the age of 10 as a factory hand in the soap plant.

Surviving are his wife, Emma Baker Adamson, and two sons, George E. of Coral Gables, and Russell E. of Madison, N. J.



You're looking in the right direction

Propylene glycol U.S.P.—a glycol with proven high purity—has the excellent properties demanded by industry for pharmaceuticals, dyes, food flavors, and certain perfumes. Propylene glycol also assists in the dispersion of soaps, oils, waxes, and greases in water.

When used in cosmetic and brushless shaving creams, for example, propylene glycol enhances the softening and cleansing action on the skin and is a mild humectant for the cream. In brushless shaving creams, it aids in

coupling the oils and lanolin in water.

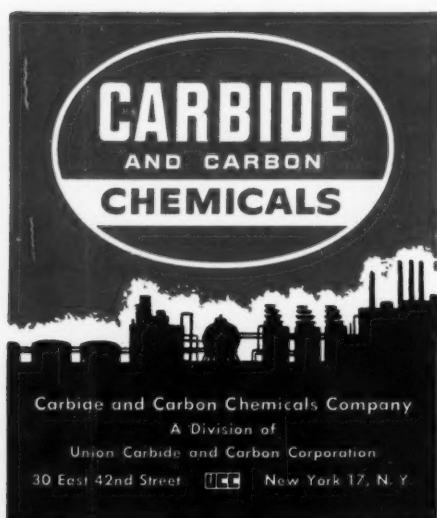
CARBIDE also produces an industrial grade of propylene glycol that is widely used as a component of polyester resins, a coupler in hydraulic brake fluids, and as a coolant in refrigeration systems.

Carbide and Carbon Chemicals Company, producer of propylene glycol since 1931, produces thirteen other diols and triols:

- Ethylene glycol
- Diethylene glycol
- Triethylene glycol
- Dipropylene glycol
- CARBOSEAL Anti-leak
- KROMFAX Solvent (Thiodiglycol)
- 2-Ethyl-2-Butyl Propanediol-1,3
- 2,2-Diethyl Propanediol-1,3
- Hexylene Glycol
- 3-Methyl Pentanediol-1,5
- Hexanetriol-1,2,6
- 2-Ethylhexanediol-1,3
- Pentanediol-1,5

For further information on propylene glycol or any CARBIDE chemical, write for your copy of "Physical Properties of Synthetic Organic Chemicals" (F-6136) or the "Glycols" booklet (F-4763). Offices in principal cities—in Canada: Carbide Chemicals Company, Division of Union Carbide Canada Limited, Montreal and Toronto.

The terms "Kromfax" and "Carboseal" are registered trade-marks of Union Carbide and Carbon Corporation.



Tru-Pine Changes Name

Tru-Pine Co., Chicago, manufacturer of insecticides and cleaning products packaged as aerosols has changed its name to Sprayway, Inc., it was announced recently. General offices and plant will remain at 7634-7644 Vincennes Ave., Chicago 20. There will be no change in officers or other administrative personnel. According to the announcement, the change in firm name was made to better identify the company with the "Sprayway" brand name under which most of its products are labelled and advertised.

New "Emcol" Emulsifier

A new emulsifier, designed to help formulate water-soluble products for aerosol packaging, was developed recently by Emulsol Chemical Co., Chicago. Trade-named "Emcol 14," the product is said to help produce sprayable aerosol emulsions with minimum foaming and container corrosion. Full details are available in Emulsol's technical bulletin #49, which may be obtained from the company, 75 East Wacker Dr., Chicago 1.

Mathieson Names Tepas

Appointment of Joseph J. Tepas to the market development department of the industrial chemicals division of Olin Mathieson Chemical Corp., Baltimore, was an-



Grand prize winner of the "Dial" soap "Get Out the Vote" election contest, C. Brewster Lee, center, of Teaneck, N. J., receives check for \$25,000 from M. G. Votaw, mayor of Teaneck. Observing are W. C. Hack, vice-president of Honey Dew Markets; Mr. Lee's mother, Mrs. C. W. Lee; and on the right, G. J. Hill, Armour household soap New York district manager.

nounced recently. In his new assignment, Mr. Tepas will specialize in sanitation and water treatment. Mr. Tepas formerly was technical



Joseph J. Tepas

representative for the firm's hypochlorite products. In recent years, he has done research on the development of chemical water treating

materials and sanitizing agents for the dairy and food industries. Prior to joining Mathieson in 1946, Mr. Tepas was associated with the U.S. Department of Agriculture Research Center at Beltsville, Md., where he worked on the development of aerosol insecticides.

Velsicol Chlordane Contest

An all-expense paid seven day vacation in Paris for two is the grand prize in a chlordane "Show and Sell" contest for dealers, to be run by Velsicol Chemical Corp., Chicago, during the months of May and June. In addition to the Paris trip for the best chlordane display, there will be four national cash prizes totalling \$1,500 and 30 big regional cash prizes totalling \$6,500. Every dealer entering the contest must buy a minimum of five cases of chlordane and use them in the display. Every salesman helping a dealer set up a display receives a special bonus of \$2.00, regardless of whether it is a winner or not. For every dealer prize, Velsicol will award a special cash prize to the formulator or distributor salesman responsible for assisting in setting up the winning display.

The contest will be backed by concentrated regional consumer advertising in California, Florida, several mid-western cities, and the Long Island area of New York. Radio, television and newspapers will be used. On a national basis, the message will be carried by large size color advertisements in a number of magazines.

Cosmetic Career Women's Feb. 6 luncheon committee and speaker, Mrs. Jane Strudwick, Four Roses Distillers, who discussed "Woman of Quality." Left to right: Norma Craig, Tussy; Neva Bradley, Daggett & Ramsdell; Mary Anne Pfenniger, Lord Baltimore Press; Mrs. Strudwick; Eve Hendricksen, Richard Hudnut, and Margery Markley, package designer. The annual Men's Day luncheon will be held at the Waldorf-Astoria, New York, Apr. 3. P. B. Morehouse, assistant general counsel, Federal Trade Commission, will discuss cosmetic advertising.



Hooker Appoints Two

William L. Gillespie has been named sales administration manager of Hooker Electrochemical Co., Niagara Falls, N. Y., it was announced recently by John S. Coey, eastern sales manager. In his new post, Mr. Gillespie will supervise the sales coordination group and all internal sales office functions at the firm's home office at Niagara Falls. Mr. Gillespie formerly was Chicago district sales manager. He will be succeeded in that position

by John T. Walmsley, who previously had served as sales represen-



W. L. Gillespie



J. T. Walmsley

tative in Michigan and northern Indiana.

Lynghem Joins Borax

K. H. Lynghem has been appointed advertising manager of the 20 Mule Team Products Division of United States Borax and Chemical Corp., it was announced recently by David V. Parker, vice-president of the division. In his new post, Mr. Lynghem will handle advertising of the division's powdered hand soaps for industrial use. He formerly was associated with the advertising department of Procter & Gamble Co., Cincinnati.

—★—

New NAEC Filler

A new semi-automatic liquid filler for small bottles and containers was introduced recently by North American Electric Corp., Chicago. The new machine is portable and is adaptable to single or multiple container filling. It may be utilized as a proportioner to deliver the same or different amounts of fill from more than one source into the same container. The filler is said to be especially suited for polyethylene containers. Further information can be obtained on request to the company, 1713 South Halsted St., Chicago 8.

—★—

Dieldrin in Malaria Drive

Dieldrin is now taking the place of DDT in the anti-malaria program set up by Indonesian countries in an effort to eradicate the disease in the next five years. Advocated by United Nations agencies, the drive covers an area inhabited by about 30,000,000 people and calls for eradication of malarial mosquitoes within five years rather than the previously attempted control by DDT. The new policy side steps the issue of insect resistance and immunity which changed the initial success of the previous program into partial failure after the first two years.

Approximately 900,000 lbs. of dieldrin, produced by Shell Chemical Corp., New York, had been shipped from the United States by the end of 1956 to implement the Indonesian program, which had been launched in May of last year.

Another Shanco **FIRST** **SHANCO 340**

A Dispersible Resin For Your
PLASTIC
BASE FINISHES

A Styrene-Vinyl Type Resin
in
Solid Form — Ground

- **LOW COST**
- **NO WATER**
- **SAVE FREIGHT**
- **EASY HANDLING**

—★—

Write for Samples and Literature.

—★—

SHANCO PLASTICS & CHEMICALS, INC.
TONAWANDA, NEW YORK

CSC Appoints Jackson

Appointment of W. Ward Jackson as vice-president in charge of sales of Commercial Solvents



Ward Jackson

Corp., New York, was announced recently by J. Albert Woods, president. In addition to sales, Mr. Jackson will be responsible for the company's advertising and sales promotion, market development and traffic activities.

Mr. Jackson formerly was vice-president of the petrochemicals division. Prior to that he served as general manager of the industrial chemicals sales department. He joined CSC in 1951.

Millmaster Lever Rep.

Millmaster Chemical Corp., 295 Madison Ave., New York, has been appointed representative of the industrial chemical sales department of Lever Brothers Co., New York, it was announced recently. Millmaster will handle sales of Lever's glycerine in New York and New Jersey.

Rohm & Haas Sales Higher

Rohm & Haas Co., Philadelphia, recently reported an increase in sales and a decline in net income and earnings during 1956. Net sales for the twelve month period ended December 31 totaled \$164,078,000, as compared with \$161,644,000, in 1955. Net income for 1956 amounted to \$16,099,000, equal to share earnings of \$15.21, as against \$17,687,000 and \$16.73, in the preceding year.

The man who needed a specialist!

With a throbbing head and uneasy stomach, the P.A. stopped for succor at the plant dispensary. Grumbled to the doc about his problems until he was told, "You need a specialist!"

The P.A. almost strangled on the aspirins he was swallowing. But the doc went on to explain that he didn't mean another M.D., but a company that specialized in tall oil products... one that could eliminate the P.A.'s frustrations in trying to get good service.

It turned out that we were the prescription, for the P.A. found that Arizona supplies tall oil derivatives *exclusively*. Months later, he stopped in at the dispensary again... but just to tell the doc that it was the best "diagnosis" he'd ever had!

All of Arizona's efforts are devoted to producing ACINTOL® Tall Oil Products and ACINTENE® Terpenes. Buyers benefit from this specialization, for it assures a knowledgeable service that reduces purchasing problems.

*Registered trademark

Arizona

CHEMICAL COMPANY
INCORPORATED

30 Rockefeller Plaza, New York 20, N. Y.

World's largest supplier of chemicals based on tall oil

DISTRIBUTORS: A. J. Lynch & Co., Los Angeles, San Francisco • Charles Albert Smith Ltd., Toronto, Montreal and Vancouver • G. R. Nottingham Co., Atlanta • T. G. Cooper & Co., Inc., Philadelphia • Farac Oil & Chemical Co., Chicago • George E. Moser & Son, Inc., Detroit • Donald McKay Smith Co., Cleveland • Thompson-Hayward Chemical Co., Houston and New Orleans • Van Waters & Rogers, Inc., Dallas



Excerpts From The Chemical Hall of FAME

William Henry Perkin

(1838 - 1907)



Knighted in England in 1906 for his contributions to pure chemical research which included the discovery of the reaction depending on the condensation of aldehydes with fatty acids.

By 1906, Foremost's El Dorado Division had been a prime supplier of coconut oil to American chemists and manufacturers for more than a decade.

F | A | M | E

FATTY | ACIDS | METHYL | ESTERS
OF COCONUT OIL

Fatty Acids

Caprylic	Eldhyco*	Capric	Lauric
Coconut	Palmitic	Myristic	

Methyl Esters

Caprylate	Eldo 18*	Caprate	Laurate
Coconate	Myristate	Caproate	Palmitate

*T.M. Reg.

For Example: ELDO LAURIC ACID

96-99% pure. (Purest Lauric Acid commercially produced.) Readily available at an attractive price. Eldo's high standards give you a better, more uniform end product.



For samples and specifications,
write Dept. S

FOREMOST FOOD AND CHEMICAL COMPANY

P. O. Box 599, Oakland 4, California

In New York:
H. Reisman Corp.

In Detroit:
Harry Holland & Son, Inc.

In Chicago:
M. B. Sweet Co.

In Cincinnati:
Howard Dock

In Cleveland:
F. W. Kamin Co.



Powderflo the new improved powdered soap dispenser is constructed of a corrosion proof heavy gauge polished metal. It holds up to 3 lbs. of powdered hand soap, has a full hinged lock-cover and a bulking volume of 70 cubic inches. Powderflo's shuttle type dispensing mechanism, with automatic soap agitator, delivers just the right amount of soap every time and is so designed as to prevent clogging caused by wet hands.

Comes complete with invisible three screw mount. Powderflo is truly the answer to a greater volume of powdered soap sales — write today for complete information and prices.

MOORE BROTHERS COMPANY

101 WARREN STREET

NEW YORK 7, N. Y.



Quality-proven Soap Dispensers and Dispensing Equipment

Hazardous Substances Laws

New or modified legislation dealing with hazardous substances is currently pending in a number of state legislatures. One of the most important bills in this group which may become a pattern for other states was introduced in Connecticut early this year, revised and reintroduced as House Bill 1061 last month.

The new version defines the term "hazardous substance" as meaning any substance which is toxic, corrosive, an irritant, flammable or generates pressure through decomposition, heat or other means and which results in substantial personal injury or illness during any customary or reasonably anticipated handling and use. The bill calls for adequate labeling of such substances on the immediate container and on any outside wrapper if necessary. Detailed rules pertaining to the wording, location, etc., of the warning statement are given. Authority to enforce the act is vested in the Commissioner of Food and Drugs.

The Chemical Specialties Manufacturers Association has made copies of this bill available to members and calls for comments at the earliest possible date.

A bill covering the labeling of hazardous substances distributed and sold in the state of Washington is currently pending as House Bill 287 in the legislature of that state.

In the state of New York paints and enamels would require ingredient statements on labels under recently proposed Assembly Bill 976.

Carbon tetrachloride is receiving legislative attention in a number of states. In Maryland House Bill 145 relating to carbon tetrachloride labeling would be added to article 43 of the Annotated Code of Maryland (1951) and take effect June 1, if passed.

Idaho House Bill 54 amends the Idaho Code to include carbon tetrachloride as a poisonous substance which will require a poison label.

Carbon tetrachloride and

cresylic acid will be covered by legislation requiring a red poison label under Senate Bill 57 now pending in the state of Iowa.

A bill pertaining to hazardous household articles and powers of the State Board of Health to issue regulations is pending in Kansas. Covered is "any article which purports to be useful in the accomplishment of any domestic task, any article for personal use, or any toy, which is a substance or which con-

tains substances that may be injurious to man." The definition excludes articles covered by other legislation such as food, drug and cosmetics laws, the state pharmacy act, etc. The proposed House Bill 216 would give the State Board of Health broad powers to regulate labeling, advertising, and uses. Complete text of the bill is available from CSMA which requests members' comments as soon as possible.

M. ARGÜESO & CO. INC.

WAXES

Importers and Refiners

CARNAUBA • OURICURY • CANDELILLA

Crude - Refined - Bleached - Flaked - Powdered

MAMARONECK REFINED BRAND

Vegetable Waxes

CERESINS - OZOKERITES

PALM WAXES - RESIN BLENDS

Cerita

INDUSTRIAL WAXES

Compounds and blends made to your specifications

M. ARGÜESO & CO. INC.

442 Waverly Avenue, Mamaroneck, N. Y.

Mamaroneck 9-4746 — Cable MARGÜESO

Refinery: Mamaroneck Chemical Div., Mamaroneck, N. Y.



Gilbert Drum Bulletins

Four bulletins dealing with the rehabilitation of used drums were published recently by L. M. Gilbert Co., Philadelphia manufacturers of drum reconditioning machinery. General information and sequence plant plan for rehabilitating steel drums are supplied in bulletin 100. Bulletins A and B describe and depict machinery for cleaning, rehabilitating, repairing, and reconditioning used drums. Machinery for drying, bak-

ing and painting the rehabilitated drums is covered in Bulletin C. The four pieces of literature can be obtained from L. M. Gilbert Co., at 1505 Race Street, Philadelphia 2, Pa.

Emulsol Moves in Chicago

Emulsol Chemical Corp., Chicago, has moved its sales and administrative offices to new and enlarged quarters at 75 East Wacker Dr., in that city, it was announced recently. The firm was located for-

merly at 59 East Madison St. Emulsol's laboratory will remain at the Madison St. address.

"Pax" Rated "Superior"

"Pax" pharmaceutical grade waterless skin cleaner was the only product to receive a rating of "superior" in a recent report on the "Evaluation of Waterless Skin Cleaners" prepared by the U.S. Public Health Service. The report was prepared for the U.S. Air Force Aero Medical Laboratory, Wright AFB, Dayton, O. Fifteen skin cleaners were included in the report.

"Pax," which was coded as "G-7" in the report, is manufactured by G. H. Packwood Manufacturing Co., 1545 Tower Grove Ave., St. Louis. It is a white, waterless cream containing lanolin and hexachlorophene. "Pax" comes in six ounce tubes, one pint plastic containers, quart and gallon cans, and five gallon drums.

New Aerosol Spray Valve

Aerosol Research Co., Forest Park, Ill., recently developed a new aerosol spray valve for cold or pressure filling. Called "AR-74," the new valve features a removable spray tip which contains both primary and secondary metering devices. It is of nylon construction with a stainless steel spring. A new "Mist-Mizer" tip is also available for low pressure and water-base spray formulations. Complete information and samples may be obtained from the company, 743 Circle Ave., Forest Park, Ill.



Century Brand Stearic Acid Beads

CENTURY BRAND

*beaded fatty acids and
glycerides are dust-free*

Customers report that they prefer to use Century Brand beaded fatty acids and glycerides. Beads do not break during handling or shipment to create nuisance dust that can cause employee discomfort and plant clean-up problems.

Century Brand fatty acids are made in every grade required by industry. The quality of each grade is carefully maintained to assure that no customer will receive off-grade materials. Harchem Division can supply Century Brand fatty acids in any desired quantities at competitive prices.

Ask for a free sample of the Century Brand beaded fatty acids suited for your application. Your requests will be answered promptly.



HARCHEM DIVISION
WALLACE & TIERNAN INC.

(SUCCESSOR TO: W. C. HARDESTY CO., INC.)
25 MAIN STREET, BELLEVILLE 9, NEW JERSEY

H-27



DCAT 31st Annual Dinner

The 31st annual dinner of the Drug, Chemical and Allied Trades Section of the New York Board of Trade was held on Mar. 7 at the Waldorf-Astoria Hotel, New York. Principal speaker was Camille Chautemps, former premier of France (1937-38). Mr. Chautemps' topic was "The Mid-east—Greatest Threat to Western Unity." More than 2,600 attended the dinner.

—★—

Makes Methyl Parathion

Velsicol Chemical Corp., Chicago, recently announced commercial production of methyl parathion, a compound used in the manufacture of phosphate-based insecticides. According to J. F. Kirk, vice-president in charge of sales, methyl parathion will be widely used during the coming growing season in areas that have developed immunity to benzene hexachloride and other chlorinated hydrocarbon insecticides.

—★—

New Shampoo Detergent

American Alcolac Corp., Baltimore, recently announced development of a new sodium lauryl ether sulfate designed to eliminate container-corrosion problems in aerosol shampoos. Tradenamed "Sipon ES," the compound in an aerosol container has undergone extensive research at the laboratories of Crown Cork & Seal, Inc., Baltimore. Results showed no corrosion present in containers stored at 100 degrees Fahrenheit for three months.

"Sipon ES" has detergent properties comparable with lauryl sulfates, a high foam level, low cloud point and is said to be effective in either hard or soft water.

World Soap Use

(From Page 47)

far as can be determined, the Cleanliness Bureau is the only organization of its kind in the world, given over wholly to the promotion of cleanliness and a wider use of more

soap, any and everybody's soap.

Belgium Leads in Soap Use

AS for individual soap use by nations, Belgium leads the world with a per capita consumption of 28.3 pounds. On this point, authorities seem to be in agreement. To some extent, widespread hard water in Belgium is reportedly responsible for high soap consumption. In second place is the United States with a figure of 27.8 pounds per capita and a yearly output of all detergents, soaps and cleansers of some 4,500,000,000 pounds. But at the German world health meeting last year in Wiesbaden, figures were presented which showed Australia in second place and the United States third. Figures given here, however, show Australia in fifth place. It is interesting to note that speakers at the German meeting deplored the fact that Germany had dropped from

Philip H. Sagarin, president of Valve Corporation of America, Bridgeport, Conn., before departing for London aboard a Pan American World Airway's Clipper. He visited VCA's British plant at Wolverhampton, England, during his week's stay in the British Isles.



a pre-war second place to ninth in the list of world soap consumption. This latter position agrees with the figures given here.

Following Belgium and the United States, comes Switzerland, with 26.1 pounds per capita, and then the United Kingdom, Australia and Canada in that order with 24.3, 24.2 and 22.4 pounds per capita, respectively. In South America, the Argentine tops the list with 22 pounds per capita. This figure seems high in relation to soap use by other Latin American countries—Uruguay, 13.2 pounds; Mexico, 10.4 pounds; Brazil, 8.9 pounds; Colombia, 7 pounds; Venezuela, 5.7 pounds; Guatemala, 5.4 pounds; Panama, 3.4 pounds. Soap and detergent output in Latin America has increased greatly during the past decade and some of the latter figures could be out of line on the low side.

Soap use figures for Japan seem to be subject to wide variation. In his 1952 report, Peet gave a figure of 3.9 pounds per capita. Based on a later report (*Soap & Chem. Spec.*, Sept., 1956), soap production in Japan figured out at 7.2 pounds per capita. What influence imports or exports or the occupation of American military personnel might have had on this figure is not known.

In considering the soap and detergent consumption of the three most populous nations of the world, Communist China, India and Soviet Russia, much speculation was in evidence. Russia is given at 10.6 pounds per capita. This is based on an estimate that the latest five-year plan in that country went 50 per cent to completion, probably a generous estimate. (*Soap & Chem. Spec.*, Dec., 1955.) These figures give Russia a soap and detergent output of 2,226,000,000 pounds, almost exactly half of the American figure. It is known that over the past 20 years, there has been constant pressure in the Soviet to increase soap output along with certain other essential consumer goods and it is felt that production has

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been boosted materially from what previously had been a rather low figure.

Also known is the fact that soap production in India has been growing considerably over the past decade. (Today 210,000,000 lbs. need 300,000,000 lbs. by 1960.) The same is thought to be true for Communist China. Such figures of some years ago as were available showed China with a soap use of about 0.2 pounds per capita. India was double this figure. Based on what is felt to be a reasonable increase in output, it is estimated that at present the figure for India is 0.6 pounds and for China somewhere around 0.3 pounds per capita.

Some of the figures given here undoubtedly will be subject to later correction as something resembling accurate statistical facts are unearthed. In a few other cases, the figures may be incorrect but will just have to stand indefinitely for lack of something more accurate.

New Patents

(From Page 151)

tral hole secured in the cover, a casing secured on the cover under the elastic ring, provided with a valve-chamber communicatively connected to the container; a valve-plunger movable in said chamber, underlying in its entirety the elastic ring, having its upper end adapted to seat on the under face of the elastic ring around said hole, for closing said chamber, and provided with a socket extending downwardly from the upper end of the plunger and a closed side and bottom; means for urging the plunger to seat on the elastic ring for closing the chamber; a tubular stem separate from the plunger, having a sliding and sealing fit with the hole in the elastic ring, slidable through the hole in the ring in the plunger, into and out of the socket, and for operatively and detachably connecting the stem to the plunger, and provided with an elongated slit which is closed by the elastic ring when the plunger is seated on the ring and communicates with the valve-chamber when the plunger is separated from the ring, for the flow of fluid from said chamber into the stem, and a press-button supported on and movable with the stem, and provided with an expansion chamber communicatively connected with the hollow stem and a discharge orifice.

No. 2,779,358. Filling Machine Incorporating Means for Purging Air from Containers Prior to Filling, patented by Paul R. Fechheimer and Edward F. Rowekamp, Cincinnati, O., assignors to Karl Kiefer Machine Co.,

Cincinnati. The patent discloses container filling apparatus featuring a head element formed to provide two chambers, one for filling material and the other for suction, a filling spout structure associated with said head, said filling spout structure including filling and exhaust tubes, a first connection between said filling chamber and said filling tube and a second connection between said suction chamber and said exhaust tube, a conduit for supplying gas under pressure, and valve means for breaking the connection between said suction chamber and said exhaust tube, and connecting said exhaust tube to said conduit, said valve means comprising a segmental valve in said suction chamber including a pressure block contacting the inner wall surfaces of said suction chamber and having a port adapted to communicate with the connection between said exhaust tube and said suction chamber, and means for urging said pressure block into contact with the walls of said second mentioned chamber.

Wax Filtration

(From Page 147)

tras. Each manufacturer furnishes units with different design features but for a specific filter should be near the ranges shown.

In general, the higher the initial cost of a given size unit the lower the operating cost. For example, to clean a large plate and frame filter will require two men at least an hour, while a pressure leaf filter of the same area would require one man only a fraction of that time.

Typical Operations

A TYPICAL filtration layout is shown in Figure 10. In general, the precoat tank is filled with prefiltered liquid, and the proper amount of filter aid for the precoat mixed in. This slurry is then pumped through the filter and recirculated back to the precoat tank until all filter aid has deposited in the filter. Valves are then slowly changed to prevent pressure fluctuations, and the liquid from the mixing tank is pumped to the filter. Usually the first few gallons are recirculated to the mixing tank to make sure satisfactory clarity is being obtained. Finally, flow is switched over to the clear filtrate tank.

In case of molten wax filtration, the mixing tank is usually the melting tank. After melting,

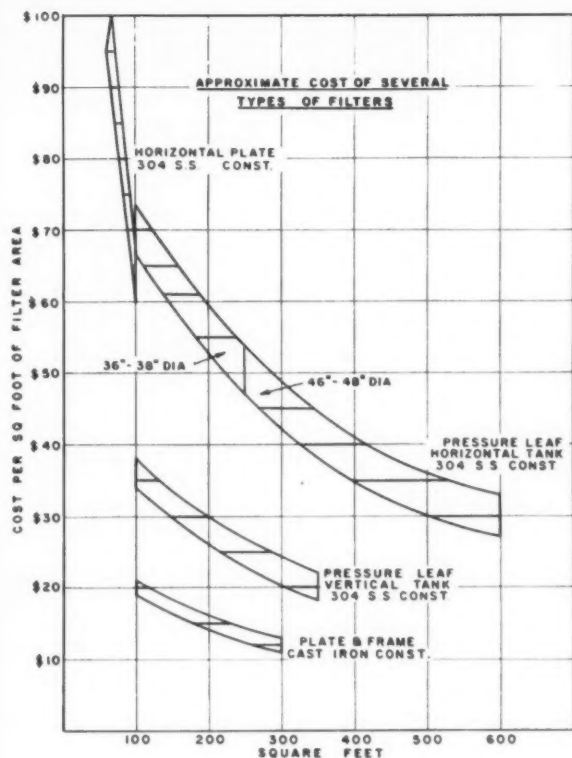


Figure 9. Chart Showing Approximate Cost, Various Filters.

bleaching clay and carbon, if used, are mixed in and contacted with the wax. At the end of the contact period filter aid is added, and filtration begins. The relatively high percentages of clay, dirt, and filter aid permit using this main batch as the precoat slurry rather than a separate precoat operation. Hot wax is recirculated through the filter until clarity is established, then the flow is switched to the clear wax tank, directly to molds, or to a flaker.

As mentioned above, because molten wax emulsion formulations vary so widely, no specific filtration data is available which covers the whole range. In Figure 11, however, data on some typical filtrations are given which may serve as a starting point if a new filtration is contemplated. Note the wide variation in performance with different emulsion formulations.

With this basic layout in mind, the following suggestions may help to achieve optimum performance of the equipment.

Improper formation of the precoat or initial cake is the most

common reason for poor filter performance. The most frequently observed difficulties are the result of uneven suspension of filter aid reaching the filter surface. This can be due to poor agitation in the tank. More frequently the pump delivers too low a flow to prevent settling in the pipes, or in the filter itself. The problem is most serious in a bottom delivery filter because flow through the filter septa will begin under the liquid head before the filter is full. This causes a build up of filter aid at the bottom of the filtering surface, and in the extreme case, upper portions of the surface will still be bare at the end of the cycle.

The following suggestions will help to prevent this difficulty.

1. Increase pump capacity. This will reduce the time before the filter is full and flowing, and the faster flow will reduce settling. Too high a pump capacity, however, will tend to scour filter aid off the filter surface near the inlets.

2. Use a finer filter aid. This will

(Turn to Page 201)



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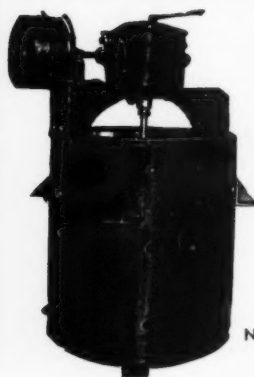
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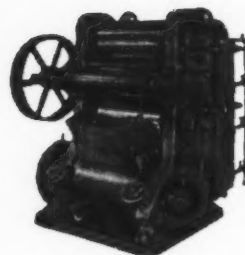


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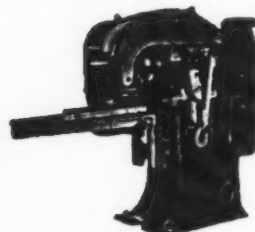


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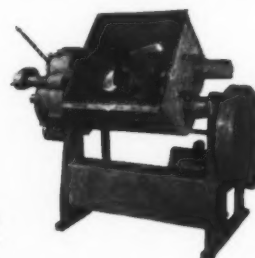
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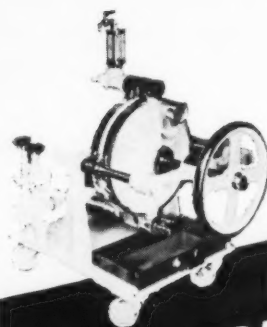
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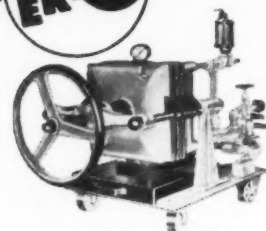
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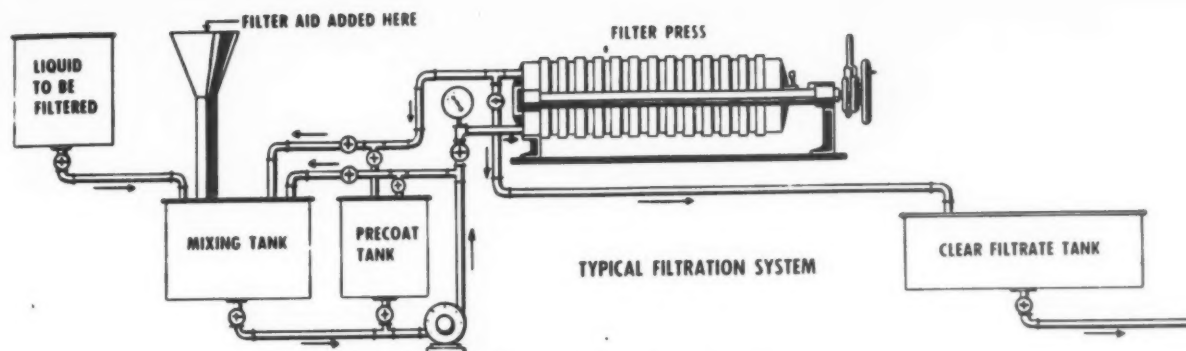


Figure 10. Typical Filter Station Layout.

(From Page 193)
increase the resistance to the initial gravity flow and thus reduce this undesirable flow under liquid head.

3. Use a tighter filter cloth or paper which will also increase resistance to gravity flow.
4. Use a more viscous liquid for

precoating which will also increase resistance to gravity flow. This could be a solution where water is used instead of prefiltered emulsion in precoating an emulsion filter.

5. Install vents at the top of each frame on a plate and frame filter, thus giving air an easy

outlet instead of forcing it through the cloth or paper. In this way a back pressure build up will not add to the problem. Tank type filters are always equipped with a vent.

6. Precoat by parts; that is, add for example about 1/3 of the precoat to the liquor, and after this has filled the filter, forced out all air, and is recirculating back to precoat tank, slowly add the balance to the recirculating liquid. This requires a really clean liquid and relatively high pump capacity.

7. Place a "goose-neck" in the discharge line from the filter extending above the highest point in the filter. Thus the filter must be full and under pressure before flow starts. If the downward leg of the goose-neck discharges to a tank below the filter, a vent should be placed in the top of the goose-neck to break the vacuum on the filtrate side of the filter septa.

Figure 11. Data For Several Typical Wax Filtrations.

PRODUCT FILTERED	TYPE FILTER	AVERAGE UNIT FLOW RATE	CYCLE LENGTH	FILTRATION TEMP., °F	PRESSURE MAX. PSI	FILTER AIDS CLAYS AND CARBON PRECOAT LB/BODY		
						GRADE	100 FT ²	FEED %
VANGUARD WAX EMULSION FLOOR POLISH FORMULATIONS	VERTICAL TANK LEAF	5-30 GAL/FT ² HR.	1/2-4 HRS.	ROOM	—	HYFLO	35	0.15
WAX EMULSION FLOOR POLISH	PLATE AND FRAME	10 GAL/FT ² HR.	1/2-2 HRS.	ROOM	50	HYFLO	10	0.1
WAX EMULSION FLOOR POLISH	HORIZONTAL PLATE	33 GAL/FT ² HR.	30 MIN.	110	10	HYFLO SOLKA-FLOC	NONE	0.6
WAX EMULSION FLOOR POLISH	HORIZONTAL TANK LEAF	125 GAL/FT ² HR.	1 HR.	82	20	HYFLO	15	0.25
WAX EMULSION	PLATE AND FRAME	12 GAL/FT ² HR.	1/4 HRS.	ROOM	22	CELITE 545	10	0.2
WAX EMULSION FURNITURE POLISH	PLATE AND FRAME	8 GAL/FT ² HR.	1 HR.	ROOM	50	CELITE 501	14	0.125
WAX EMULSION FLOOR POLISH	HORIZONTAL TANK LEAF	155 GAL/FT ² HR.	1.8 HRS.	ROOM	35	CELITE 512	15	0.15
MOLTEN CARNAUBA	PLATE AND FRAME	21 LB/FT ² HR.	1-2 HRS.	225	85	HYFLO SUPER-FILTRAL DARCO	NONE	3.5
MOLTEN PARAFFIN	HORIZONTAL TANK LEAF	360 LB/FT ² HR.	40 MIN.	180	—	HYFLO FILTRAL 37	40	NONE
MOLTEN OLIVICURE	PLATE AND FRAME	9 LB/FT ² HR.	15 MIN.	190	—	CELITE 501	NONE	1.0
MOLTEN CARNAUBA	PLATE AND FRAME	10 LB/FT ² HR.	1 HR.	200	—	HYFLO FILTRAL DARCO	NONE	4.5
								3.0
								1.0

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8. Cut down on or close the outlet valve to cause a back pressure on the filter. This is effective only if the filter is well vented.
9. In a top inlet plate and frame filter, the problem is complicated because the first frame tends to fill and filter before the second, and so on to the end of the filter. Not much can be done about this in a closed delivery unit (other than the previous suggestions) except to install individual frame vents. When starting, open only about $\frac{1}{4}$ of the vents at the end away from the inlet, then as they begin to spout, work toward the inlet. The air trapped in frames at the inlet end of the filter will tend to prevent their filling first.
10. Drill the tail plate and install flexible connection to obtain a double inlet. This is expensive, but very effective with a good pump.

F. L. Horine, an internationally known filtration expert, once summarized the suggestions above in the following sentences, taken from an unpublished filtration report:

"You can't precoat a top single inlet, unvented, closed, bottom delivery filter directly discharging through a wide open line into a lower level tank, the filter being dressed with an open filter cloth and the pre-coating slurry being a high concentration of a coarse filter aid in a small volume of water being pumped with a low capacity pump. I can't do it either, but I hear of filter users trying to."

As mentioned above, most filtration difficulties come from improper precoating or initial cake formation. Based on our experience, most of the balance can be traced to improperly cleaned filters or plugged filter septa.

In a plate and frame filter using a filter cloth, a plugged septum can be overcome by a simple replacement. A wide variety of filter septa are available, and proper se-

lection can minimize the difficulty.

Short cycles, and high pressures with some plate and frame units are due to failure to keep the drainage surfaces of the plates clean. Under pressure, filter cloth or paper tends to be pressed into the drainage channels of the plates reducing the flow area. The problem becomes most serious when the drainage channels are already partly filled with solids, etc., left from previous cycles.

The pressure leaf filters can sometimes give more trouble because of the type of construction. Because metal screens are used over and over again, if not cleaned properly at the end of each cycle, and particularly if a good precoat has not properly protected them, areas of the screens can become dirty.

Dirt or solids build up behind the screens in the drainage chamber of the leaf can also cause high pressures and short cycles as in the case of plate and frame units.

Fortunately, with wax, a regular cleaning with suitable solvent should keep filters in peak operating condition.

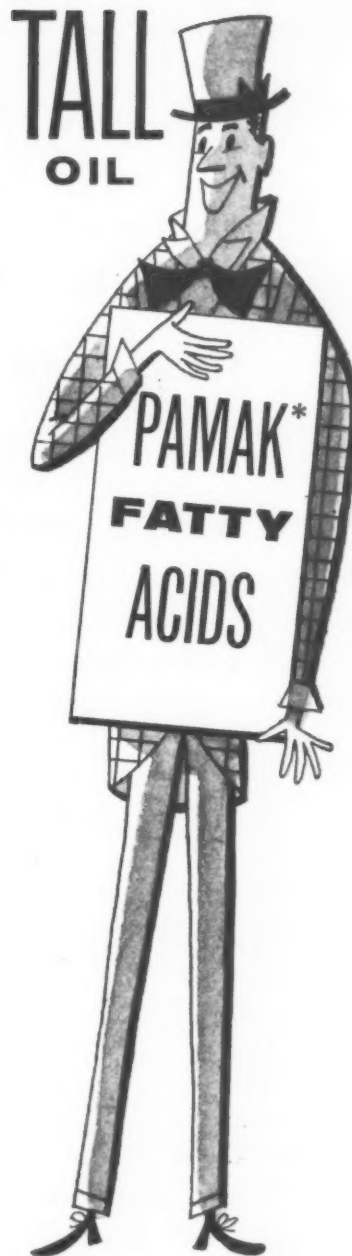
Conclusion

A SHORT review of filter aid, filter equipment and their use was presented to form a basis on which some suggestions for optimum performance have been offered. Briefly, a properly precoat, properly installed, clean filter with properly designed pump and auxiliaries should give top performance.

Acknowledgments

MUCH of the information and illustrations presented in this paper are the result of the wholehearted cooperation of the following filter manufacturers. Their help is acknowledged with thanks.

Bird Machine Co.; Eimco Corp.; Enzinger Division, Duriron Co.; Niagara Filters Div., American Machine & Metals Corp.; Process Filters, Inc.; T. Shriver and Co.; Sparkler Manufacturing Co.; D. R. Sperry and Co.



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ing, Roosevelt Hotel, New Orleans,
April 29-May 1.

American Society of Perfum-
ers, third annual symposium on
fragrance, Essex House, New York,
March 20.

Association of American Soap
& Glycerine Producers, 31st annual
convention, Waldorf-Astoria Hotel,
New York, Jan. 22-24, 1958.

Chemical Market Research As-
sociation, New York, March 27-28,
Lake Placid, N. Y., Sept. 16-17.

Chemical Progress Week,
fourth annual celebration, April 8-12.

Chemical Specialties Manu-
facturers Association, 43rd mid-year
meeting, Drake Hotel, Chicago, May
20-22; 44th annual meeting, Holly-
wood Beach Hotel, Hollywood, Fla.,
Dec. 9-12.

Drug, Chemical and Allied
Trades Section, New York Board of
Trade, 87th annual meeting, Galen
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1957.

Entomological Society of
America, north central branch, 12th
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Folding Paper Box Associa-
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Grocery Manufacturers of
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11-13, 1957.

International Sanitation Main-
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annual exposition, Navy Pier, Chi-
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National Association of Re-
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National Packaging Exposi-
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National Pest Control Asso-
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National Restaurant Conven-
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National Sanitary Supply
Association, national trade show and
convention, Conrad Hilton Hotel, Chi-
cago, March 31, Apr. 1-3 1957.

National Supermarket Non-
Food Exhibit, Shrine Exposition Hall,
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terials Exposition, Convention Hall,
Atlantic City, N. J., March 25-28,
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Synthetic Organic Chemical
Manufacturers Association, monthly
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Toilet Goods Association, 22nd
annual convention, Waldorf-Astoria
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Tale Ends

LUXURY has its drawbacks! It seems that Jeff Wood, top P & G veep, was having the devil's own time with static electricity from the inch-thick carpet in his private office in the new P & G building in Cincinnati. Every time he touched a door knob, he really got the business. Then up stepped his old pal, Russ Young, prez of Davies-Young Soap Co. of Dayton, and offered for free a supply of their anti-static spray. Jeff accepted the offer, used the stuff and, — presto, — no more static! This is not a testimonial, says Mr. Wood.

NATO! It wouldn't be such a bad name for a soap powder at that. And thereby hangs a tale. Recently, the German Atlantic Association at Bonn sent a questionnaire to a group of women asking various and sundry questions. It seems that 47 out of every 100 women did not know what the North Atlantic Treaty Organization is. Many thought that the initials, NATO, stood for a soap powder or baby food.

During the great blitz of London in World War II, it seems that the first thing most everybody asked for as bombed out citizens flocked to rest centers was a bath. Dirty from the dust of bomb rubble, the desire to remove dirt and get clean again came first. Then followed a request for a drink of water and then inquiries about relatives and friends in that order. This interesting order of events was just brought up by one of our staff who was on the job in London shelters all through the blitz.

Aerosol Techniques, Inc. of Bridgeport, Conn., has just come up with a new and novel purchasing gimmick. It's called "What's your big idea?" And it's a card resembling a theatre ticket which was sent to all their suppliers. On the front it states, "This ticket will be honored for one appointment with the purchasing department of Aerosol Techniques, Inc." On the back of the card, you outline your new aerosol idea, send it in and it gets you in to see the purchasing department. What happens if two salesmen come up with the same idea? Aerosol Techniques doesn't say.

For hitting a man with a cake of soap recently, a Chicago bobby soxer was arrested. It seems that she put the bar of soap into a sock and with a healthy swing belted her victim over the noggin. It also seems that she was bent on robbery, but got caught at it. As is customary in such cases, she sobbed in court that she needed the poor bloke's money to pay her rent. Memo: Remind Ruth Goldberg of Cleanliness Bureau to add this to her long list of unique and non-detergent uses for soap.

Just ran across an old copy of "Pag-eant Magazine," (June, 1954) in which they illustrated with cartoons a dozen uses for soap outside of washing one's hands,

neck or the old man's overalls. Stuck drawers and windows, threading needles, sewing heavy fabrics, lubricating squeaking door hinges, picking up glass slivers, working keys in rusty locks, marking dress hems, and so forth are a few of the uses given. If we remember, this sounds like some stuff put out by the Cleanliness Bureau around that time although no mention of said Bureau is made.

Canada's soap buying habits are distinctly different from those of the U.S., according to an edit in the "Financial Post" of Toronto. In what way, they fail to say. But they base this discovery on an article in "Tide," American advertising magazine, by P&G's advertising director for Canada. Then the Post states that some Americans assume that Canadians are "simply a strayed tribe of Americans . . . living a little further north," but in reality they are a completely independent people who intend to remain that way. Who ever said they weren't? And what's the connection with soap buying habits?

Man bites dog! Fifty-eight soap factory hands in Johannesburg, South Africa,

were hailed into court and fined one pound each for an illegal strike which they staged last October. The strike came when a worker was fired for insubordination. It ended in a riot and police with machine guns. After all was quiet, the factory management brought the court charges against the strikers. The fines resulted. U. S. Courts and NLRB please note.

W. T. Rawleigh Co., well-known "wagon house" of Freeport, Ill., recently installed a new completely automatic aerosol filling line. It is understood that their output of aerosol products at present approximates a half-million units and that the equipment will handle several times this production. Obviously, Rawleigh have full faith in the future of aerosols and anticipate a real growth in sales of pressurized products.

Mrs. Calvin Gearheart of Ashland, Kentucky, noted her pet dog was scratching. Ah, fleas! So she grabbed what she thought was a can of flea spray and doused the pooch good and proper. The dog went nuts and scurried around the room looking for some escape. The lady then examined the can and, lo and behold, it was not flea spray but dog repellent. All of which goes to show that ladies don't read labels, never have and probably never will! The same for men.

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